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BOTANICAL MAGAZINE;

OR

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To which are added,

THEIR NAMES, CLASS, ORDER, GENERIC AND SPECIFIC CHARACTERS,
ACCORDING TO THE SYSTEM OF LINNÆUS;

Their Places of Growth, Times of Flowering, and most approved Methods of Culture.

CONDUCTED

By SAMUEL CURTIS, F. L. S.

THE DESCRIPTIONS

By WILLIAM JACKSON HOOKER, L. L. D.
F. R. A. and L. S. and Regius Professor of Botany in the University of Glasgow.

VOL. I. 57

OF THE NEW SERIES;

Or Vol. LIV. of the whole Work.

Here Spring perpetual leads the laughing hours,
And Winter wears a wreath of summer flowers.
SOTHEBY'S *Virgil.*

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N. 2705

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(2705)

MUTISIA SPECIOSA. HANDSOME PINNATE-LEAVED MUTISIA.

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Class and Order.

SYNGENESIA POLYGAMIA SUPERFLUA.

(Nat. Ord.—COMPOSITÆ. Div. PERDICIEÆ: corollulis bilabiatis. SPRENG.)

Generic Character.

Involucrum cylindricum, imbricatum, squamosum; squamis latis. *Recept.* nudum. *Flosculi, disci,* hermaphroditi, tubulosi, 5-dentati, demum in lacinias, 2—5 æquales, vel in tres inæquales fissi; *antheræ* bisetosæ: *radii* fæminei, bilabiati; labio inferiore ligulam referente, tridentato, superiore minore bipartito (raro integro vel nullo); rudimenta filamentorum 5.

Specific Character and Synonym.

MUTISIA *speciosa;* scandens, foliis pinnatis 6—7 jugis petiolis cirriferis, foliolis ovato-lanceolatis acutissimis sessilibus arachnoideo-tomentosis demum glabris, floribus solitariis longe pedunculatis, squamis inferioribus involucri recurvis.

MUTISIA speciosa. *Aiton Mss. in Hort. Reg. Kew.*

DESCR. A scandent plant, of humble growth, as cultivated in a pot, in the stoves of the Kew Gardens; but, probably, in its native soil, reaching to a considerable length. *Stems* and *branches* angular. *Leaves* pinnated, with about six or seven alternate leaflets on each side, sparingly covered with a cobweb-like down, at length, probably, in consequence of age, becoming glabrous: *Leaflets* one, and sometimes nearly two inches long, ovato-lanceolate, entire, very acute, contracted at the base, but not petiolate, and there three-nerved; the rest of the leaflet veiny: main *petiole* slender, terminated by a large branching tendril. *Stipules* elliptical. *Peduncle* terminal, very long, furrowed, with one or two small lanceolate *bracteæ*, and bearing a single large showy flower. *Involucre* long, cylindrical, clothed with numerous rather lax scales, which are ovato-oblong, the lower ones acute and reflexed, the upper ones erect and obtuse. *Florets* of the circumference female, about sixteen, forming a ray, each composed of a very long slender tube, two-lipped at the extremity; the outer-lip a beautiful purple colour, ligulate, tridentate: the inner one pale, cut into two deep, revolute, filiform laciniæ: the mouth furnished with five filiform processes, or abortive stamens. *Germen* oblong: *Style* long: *Stigma* cleft. *Pappus* three-fourths of the length of the floret, feathery. *Florets* of the disk perfect, tubular, yellowish, five-toothed, at length breaking into two or five equal revolute segments, or more frequently, into three unequal ones, the broadest one (three united segments) tridentate. *Anthers* long, greenish, protruded, each with two long setæ at the base. *Germen, Pappus,* and *Style,* as in the florets of the circumference.

We rejoice in having the opportunity to commence the New Series of the Botanical Magazine with so interesting a subject as the present plant, a novel species of a genus, of which, although twelve species exist in our Herbaria, not one had ever previously been cultivated in Great Britain. The individual now under consideration is a native of Brazil, and was communicated to the Royal gardens at Kew, by M. PARMENTIER of Paris. There it blossomed in September, 1826; and from a specimen kindly given to me, by Mr. AITON, aided by an excellent drawing in that gentleman's collection, the annexed figure and description were made.

Four species only of MUTISIA, with pinnated leaves, have been hitherto described. M. *grandiflora, Clematis, peduncularis,* and *viciæfolia,* and these, as well as the simple-leaved ones, are all natives of the western side of South America. The one to which the present plant is most nearly allied, is, perhaps, M. *peduncularis;* but that has the scales of the involucre all imbricated, and the larger segments of the corollules of the ray oval.

The whole plant turns black in drying. We have received native specimens from the neighbourhood of Rio Janeiro, from Mr. HARRIS of that place, as well as more recently, from our valued friend, Mr. BURCHELL, who is now exploring, as a Naturalist, that highly interesting country.

Fig. 1. Floret of the Circumference. 2. Ditto of the Disk deprived of the Pappus. 3. Base of an Anther.—*Magnified.*

N. 2706.

W.J.H. del.

Swan Sc.

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PYRETHRUM ULIGINOSUM. LARGE-FLOWERED MARSH OX-EYE.

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Class and Order.

SYNGENESIA POLYGAMIA SUPERFLUA.

(Nat. Ord.—COMPOSITÆ. DIV. CORYMBIFERÆ.)

Generic Character.

Receptaculum nudum. *Pappus* marginatus. *Cal.* hemisphæricus, imbricatus ; squamis acutiusculis, margine scariosis. WILLD. DIV. LEUCANTHEMA.

Specific Character and Synonyms.

PYRETHRUM *uliginosum ;* caule erecto superne ramoso, foliis sessilibus lanceolatis profunde serratis scabriusculis, floribus corymbosis.

PYRETHRUM uliginosum. " *Waldst. et Kitaib. Pl. Rar. Hung.*" *Willd. Sp. Pl. v. 3. p.* 2152. *Spreng. Syst. Veget. v. 3. p.* 585.

CHRYSANTHEMUM uliginosum. *Pers. Syn. Pl. v. 2. p.* 460.

" CHRYSANTHEMUM lacustre." *Brot.*

MATRICARIA inciso-serrata. *Poir. in Encycl. Meth. Suppl. v. 3. p.* 604.

DESCR. Annual, herbaceous. *Stems* three to five feet high, rounded, striated, glabrous, branched almost wholly above, and there in a somewhat corymbose manner. *Leaves* four to five inches long, lanceolate, deeply and very irregularly inciso-serrate, particularly towards the extremity ; at the base, too, having generally a large tooth on each side; the upper ones gradually smaller and less toothed : all of them slightly scabrous, with short hairs, and appearing, under a lens, minutely dotted, nerved, the midrib prominent on the under-side, swollen at the base, where it is inserted upon the stem : *colour,* a deep green, paler beneath. *Flowers*

Flowers on several, terminal, leafy *petioles*, forming an imperfect corymb, very large, three to four inches in diameter. *Involucre* hemispherical, compressed, of many imbricated dark-coloured scales, membranaceous and diaphanous at the margin. *Florets* of the ray very long, white, ligulate, tridentate at the extremity; their *germen* oblong, abortive?, not crowned. *Style* with a yellow, bifid *stigma*. *Florets* of the disk small, yellow, tubular, the lower part cylindrical, covered with yellow glands, the *limb* broad, cup-shaped, five-toothed, the points of the teeth black, erect; *stamens* with the *anthers* protruded. *Germen* oblong, sulcated, crowned with a cup-shaped membranous pappus. *Style* longer than the stamens; *stigma* bifid. *Receptacle* convex, naked, dotted.

The noble flowers of this plant, added to the lateness of the season when they are expanded (the month of October), render this a most desirable plant for the garden or the shrubbery. It is quite hardy; a native of Hungary, Spain, and Portugal, and the seeds of it were sent to the Glasgow Botanic Garden, in 1825, by Mr. FISCHER, of Gottingen. We observed the same plant flowering in the Royal gardens of Kew, during the Autumn of the last year.

Fig. 1. Lower leaf, natural size. 2. Floret from the Disk. 3. Floret from the Circumference.—*Magnified*.

N. 2707.

W.J.H. del.

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Swan Sc.

ASTER ACUMINATUS. POINTED-LEAVED MICHAELMAS DAISY.

****

Class and Order.

SYNGENESIA POLYGAMIA SUPERFLUA.

(Nat. Ord.—COMPOSITÆ. Div. CORYMBIFERÆ.)

Generic Character.

Receptaculum nudum. *Pappus* simplex. *Cor.* radii plures 10. *Cal.* imbricati *squamæ* inferiores (nonnunquam) patulæ.

Specific Character and Synonyms.

ASTER *acuminatus ;* læviter pubescens, caule simplici flexuoso, foliis conformibus majusculis cuneato-lanceolatis superne inciso-serratis basi apiceque attenuatis, panicula divaricato-corymbosa, pedicellis longis bracteolatis, involucri squamis lineari-lanceolatis acuminatis appressis.

ASTER acuminatus. *Michaux Fl. Bor. Am. v. 2. p.* 109. *Pursh. N. Am. Fl. v. 2. p.* 555. *Pers. Syn. Pl. v.* 2. *p.* 447. *Spreng. Syst. Pl. v. 3. p.* 534.

DESCR. *Stem* erect, herbaceous, in a cultivated state, from a foot to a foot and a half high, flexuose, simple, angular, downy, bare of foliage at the base, upwards furnished with *leaves,* about four inches long, and nearly equal in size, very slightly downy, lanceolate, broadest above the middle, so as to be somewhat cuneate, and thence to the point inciso-serrate, at the base and at the extremity acuminated, the upper surface somewhat wrinkled, the lower with prominent anastomosing veins. *Panicle* terminal, longer than the leaves, subcorymbose; the *pedicels* long, slender, with many small subulate scales or *bracteæ,* larger at their base, the lower part of the panicle, and that only, leafy. *Involucre* subcylindrical, glabrous, of several broadly subulate appressed scales. *Florets* of the ray rather long, white, recurved, and twisted; those of the centre or disk purplish; their teeth recurved. *Stamens* and *Style* much exserted, yellow. *Seeds* crowned with a *pappus*, which is nearly as long as the florets.

Discovered by MICHAUX in Canada, and sent to our gardens from the same country (the neighbourhood of Montreal), by Mr. CLEGHORN. PURSH discovered it upon the Alleghany mountains; and a variety of it, with fewer flowers, upon the highest mountains of Virginia and Carolina. With us it flowers in October.

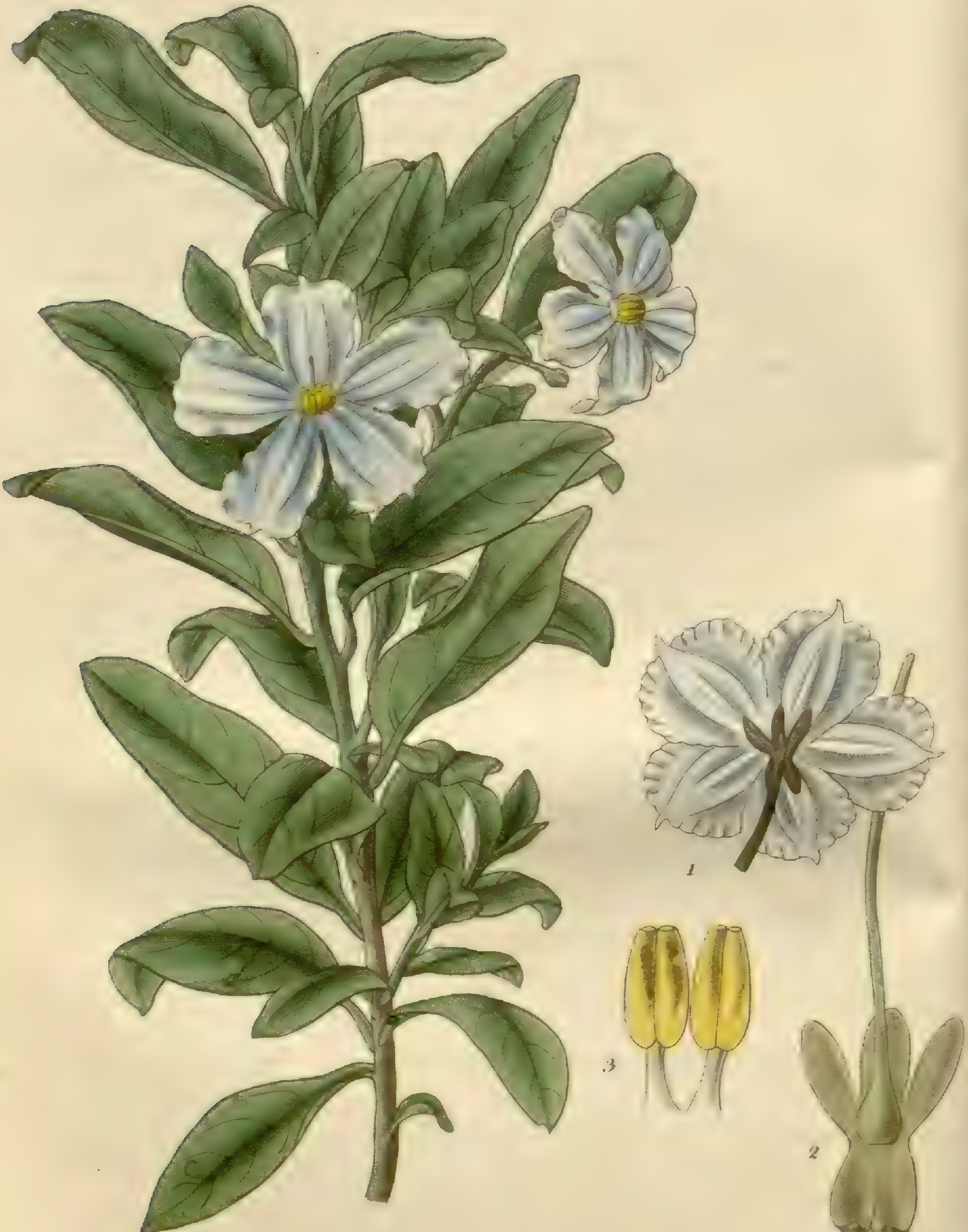
This present is one of the few well-marked species of this most troublesome genus, characterized by its erect, simple, flexuose, *stalk;* large and uniform *leaves;* together with the long, slender *bracteolated pedicels* to the flowers. The *Involucre* has the scales singularly fine and delicate, and in the old state so narrow, as scarcely to be distinguishable from the pappus.

We propose, from time to time, doing what lies in our power in the present work, towards illustrating the individuals of the genus ASTER: for the British collections contain numerous but ill-understood species, which, flowering in the latest season of autumn, constitute the chief ornaments of our garden, till winter comes

"to rule the varied year."

Fig. 1. Involucre. 2. Floret of the Disk. 3. Floret of the Circumference. —*Magnified.*

N. 2708



Pub. by S. Curtis, Walworth, Jan. 1827.

SOLANUM CORIACEUM. CORIACEOUS SOLANUM.

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Class and Order.

PENTANDRIA MONOGYNIA.

(Nat. Ord.—SOLANACEÆ.)

Generic Character.

Cal. 5—10-partitus. *Cor.* subrotata, 4—10-fida. *Antheræ* conniventes, apice poro gemino dehiscentes. *Bacca* 2, 3, 4-locularis, placentis septo adnatis. *Semina* glabra.

Specific Character.

SOLANUM *coriaceum;* inerme, fruticosum, glabrum, foliis petiolatis oblongis coriaceis nitidis integris subvenosis, pedunculis terminalibus sub-unifloris, corolla 5-loba, lobis obtusissimis plicatis mucronulatis, calyce 4-partito.

DESCR. At present, in our collection, one individual of this plant has only attained the height of a foot. It is rigid, erect, much branched, glabrous in all its parts. *Leaves* two to three inches long, somewhat acute at the extremity, at the base tapering into a short *footstalk,* the *texture* thick and coriaceous, the surface very slightly veined, the margin quite entire. The *flowers* are upon short simple, or imperfectly branched terminal peduncles. *Calyx* of four deep segments, spreading, the lower evidently formed of two, cohering at the margin. *Corolla* varying in size, sometimes an inch across, almost plane, of a beautiful purplish-blue colour, five-lobed, the lobes waved at the margin, longitudinally plicate in the middle, very obtuse and mucronated at the extremity. *Stamens: Filaments* and *Anthers* short: the latter deep orange. *Germen* ovate: *Style* longer than the stamens.

We scarcely know any tender species of the genus more deserving of being cultivated than the present, for which we are indebted to ROBERT BARCLAY, Esq. of Bury Hill, who received the seeds from Mexico. It forms a handsome bushy shrub, with thick shining, and rigid, coriaceous leaves, and beautiful purplish-blue flowers, having in the centre a deep orange-coloured spot, formed by the stamens. These blossoms too are frequent upon the plant; but those which appeared when it was quite young were much larger than the subsequent ones. There is often an irregularity in the lobes of the corolla, and the calyx is constantly and unequally four-partite.

Fig. 1. Back view of a Flower. 2. Calyx and Pistil. 3. Stamens.—*Magnified.*

N. 2709

W J H del

Pub. by S. Curtis Walworth Jan. 1827.

LIPARIS FOLIOSA. MANY-LEAVED LIPARIS.

****

Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ. Div. MALAXIDEÆ. LINDL.)

Generic Character.

Labellum planum, explanatum, integrum, varie versum. *Columna* alata. *Pollinia* 4 (antice cohærentia). LINDL.

Specific Character and Synonyms.

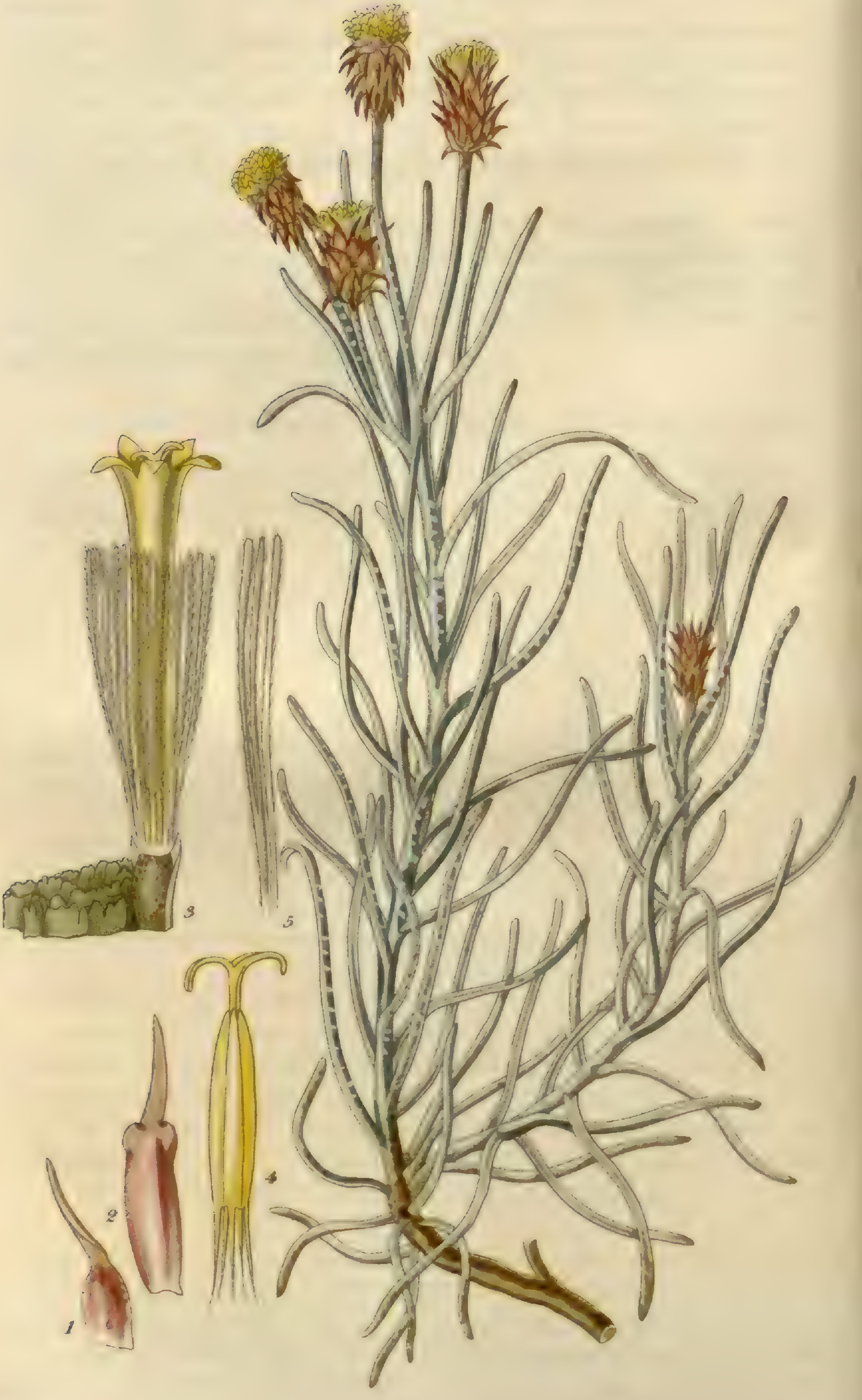
LIPARIS *foliosa ;* bulbo rotundato, foliis (subtribus) lanceolatis carinatis enerviis racemo subæqualibus, scapo compresso, labello apice reflexo obscure tridentato.
LIPARIS foliosa. *Lindl. in Bot. Reg. t.* 882.

DESCR. *Plant,* to all appearance, parasitic. *Bulb* roundish, about an inch in diameter, bearing a few ovate, acute bracteæ at the base, and, at the summit, about three lanceolate, carinate, somewhat fleshy, acute, nerveless, recurved *leaves.* The *scape* springs from the centre of those leaves, which, being the present year's production, have no bulb yet formed. It rather exceeds the leaves in length, is compressed, and bears about ten flowers in a lax *spike* or *raceme.* The segments of the perianth are all linear, pale yellow green, reflexed, the two innermost ones the narrowest. The *labellum* broadly oblong, yellow green, with an orange spot in the centre, thick and fleshy, the lower half erect, and appressed as it were to the column, the upper half bent down ; the extremity has three obtuse teeth. *Column* linear-clavate, curved, margins in front slightly winged. *Anther* yellow, operculate, enclosing two didymous waxy *pollen-masses. Germen* linear, straight, tapering down into a footstalk, and having, at its very base, a small bractea.

Drawn from a plant presented by Mr. Barclay, to the Glasgow Botanic Garden, which flowered in the month of October, 1826. It is a native of the Mauritius, and there, in all probability, grows upon trees. The figure given in the *Botanical Register* being drawn from a young specimen, the bulbs were not formed, and hence, probably, Mr. Lindley was induced to suppose the plant was terrestrial.

Like many other parasitical plants, it is easily cultivated in common soil, which serves as a support to the individual, and as a vehicle for moisture. The roots that are thrown out from the base of the bulb lie nearly horizontally upon the surface of the earth.

Fig. 1. Single flower. 2. Summit of the Column, from which the Anther is removed. 3. Inside view of the Anther-Case. 4. Pollen masses. 5. Lip.—*Magnified.*



W.I.H del

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GNAPHALIUM MODESTUM. SQUAMOSE-FLOWERED CAPE GNAPHALIUM.

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Class and Order.

SYNGENESIA POLYGAMIA SUPERFLUA.

(Nat. Ord.—COMPOSITÆ.)

Generic Character.

Involucrum imbricatum, squamis internis scariosis subcoloratis. *Rec.* nudum, scrobiculatum. *Flosc. radiales* fæminei, imperfecti, tenuissimi *v.* nulli. *Pappus* pilosus seu apice penicellatus. *Spreng.*

Specific Character and Synonym.

GNAPHALIUM *modestum;* fruticosum, ramosum, foliis linearibus canaliculatis dense tomentosis, pedunculis terminalibus solitariis, involucro lato-cylindraceo tomentoso, squamorum apicibus attenuatis nudis reflexis.

ASTELMA modestum. *Sieber Fl. Cap. n.* 12.

DESCR. *Stems* decumbent at the base, throwing up numerous erect *branches,* which are stiff and rigid, covered with a dense cottony down. *Leaves* alternate, about two inches long, linear, almost filiform, waved, semicylindrical on the back, grooved in front, thickly clothed with white down. The *peduncles* terminate the branches, and are from two to three inches long, cottony, single-flowered. *Involucre* broadly cylindrical, of several imbricated reddish *scales,* cottony, especially in the middle; the extremities attenuated into a long, brown, membranaceous, naked, reflexed point. *Receptacle* foveolated, the cells deep, the partitions laciniated. *Florets* all tubular, perfect, yellow, five-toothed. *Anthers* each with two awns at the base.

Germen more than half immersed in the cells of the receptacle, at length forming an oblong tuberculated *fruit*. *Style* (as well as the stamens) included. *Stigma* a little exserted, bifid, the *segments* linear, spreading. *Pappus* of numerous white, filiform, feathery processes, united at the base, and often forked.

The only knowledge we have of the cultivated state of this plant, is derived from the Royal gardens at Kew, in which inestimable collection it flowered in the month of June, 1826. From an excellent drawing then made, and in the possession of W. T. AITON, Esq. the annexed figure was made. The seeds were sent, in 1824, from the Cape of Good Hope, by Mr. BOWIE, who was long and most advantageously employed in collecting plants in the interior of Southern Africa, at the government's expence. Every friend to Science must regret that this indefatigable Naturalist, after sending the greatest treasures, both of living and dried plants to the Royal gardens, and, in the midst of his usefulness, has, by a needless stretch of parsimony, been recalled. We do rejoice to find, however, that he has resolved upon visiting the same productive country, as a Naturalist, on his own account, only seeking for remuneration in the sale of such living or dried specimens, or seeds, as may be useful to the Botanists and Cultivators in Europe. Dr. SIEBER, of Prague, has visited the Cape and other distant countries in the same capacity, and has thereby considerably aided the cause of Science.

The Naturalist last mentioned, if not the first to discover the present plant, was, at least, the first to publish it, in his " Specimens of Cape Plants," as belonging to the genus ASTELMA of Mr. BROWN ; but that genus is said to have a *receptacle* which is *neither chaffy* nor *honey-combed*. In the present case, it is deeply *honey-combed*.

Fig. 1. Inferior, and Fig. 2. Superior Scale of the Involucre. 3. Floret and portion of the Receptacle. 4. Stamens.—*Magnified*.

N. 2711

W.J.H. del.

Pub by S Curtis Walworth Jan 1827.

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CANDOLLEA CUNEIFORMIS. CUNEATE CANDOLLEA.

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Class and Order.

POLYADELPHIA POLYANDRIA.

(Nat. Ord.—DILLENIACEÆ.)

Generic Character.

Cal. 5-partitus, persistens. *Pet.* 5. *Phalanges* plurimæ, singulæ 4—5-antheriferæ. *Caps.* 3—6-loculares, 2-spermæ. DE CAND.

Specific Character and Synonyms.

CANDOLLEA *cuneiformis;* foliis obovato-cuneatis glabris subdentatis, floribus sessilibus.

CANDOLLEA cuneiformis. *Labill. Nov. Holl. v.* 2. *p.* 34. *t.* 176. *De Cand. Syst. Veget. v.* 1. *p.* 423. *Ejusd. Prodr. v.* 1. *p.* 73. *Spreng. Syst. Veget. v.* 3. *p.* 338.

HIBBERTIA cuneiformis. *Smith in Rees. Cycl.*

DESCR. A shrubby much branching *plant;* according to LABILLARDIERE, 8—9 feet in height. *Branches* reddish-brown, much marked with the scars of fallen leaves; the leaves are mostly confined to the extremity of the branches, alternate, crowded, obovato-cuneate, of a thickish texture, stiff and rigid, furnished with a midrib, the margins entire, or, more or less distinctly toothed towards the extremity, every where, as is the whole plant, glabrous. *Flowers* sessile at the extremity of the branches, moderately large, yellow. *Calyx* of five unequal, spreading, ovate leaves, or deep segments, two of them, the smaller ones, acute, the others obtuse, and much resembling the smaller leaves. *Stamens* in five bundles, each bundle placed opposite a petal, and composed of four, rarely five, linear, yellow *anthers*, whose filaments are free at the extremity. *Pistils* five. *Germen* ovate, gibbous, tapering into a filiform *style*, with an obtuse *stigma*. *Capsule* " opening interiorly," containing two *seeds*, which are roundish, brown, erect, and almost, or sometimes wholly enclosed in a membranous arillus.

This exceedingly rare plant blossomed in the Royal gardens at Kew, in the month of May, 1826, having been raised from seeds, gathered, in 1823, by Mr. ALLAN CUNNINGHAM, at King George's Sound, during the fourth voyage of discovery of Capt. KING. LABILLARDIERE had found it previously, in Van Lewin's Land.

The plant has much the habit of HIBBERTIA, with which, indeed, Sir JAMES SMITH unites it; but it differs from that genus essentially, in the polyadelphous stamens.

The accompanying figure was copied from an excellent drawing, in the possession of W. T. AITON, Esq,

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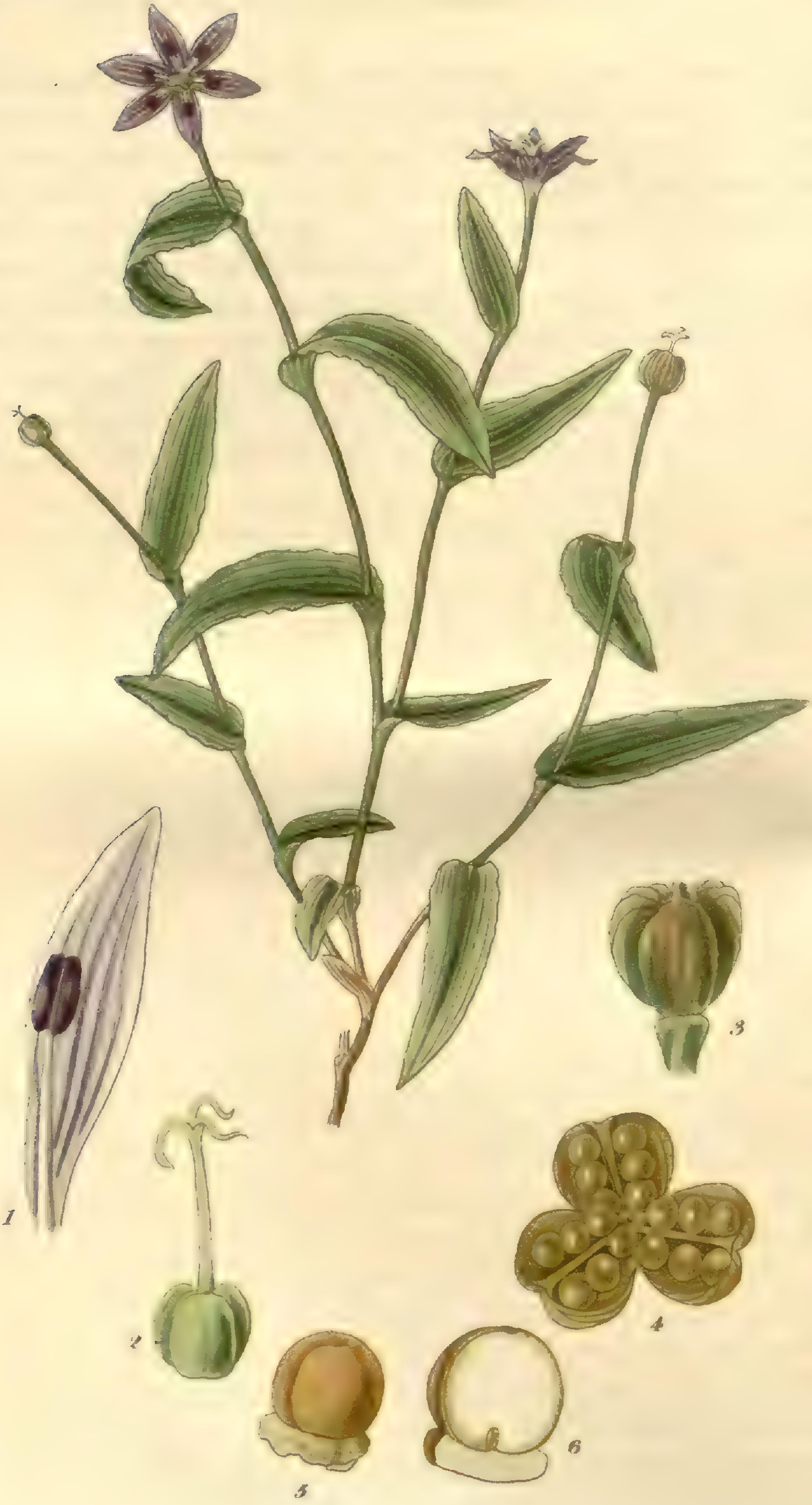
Fig. 1. Back view of a Flower. 2. Stamens and Pistil. 3. Single cluster of Stamens. 4. Pistils. 5. Capsule, scarcely ripe, cut open to shew the seeds.—*Magnified.*

N. 2712



Pub. by S. Curtis, Walworth, Jan. 1827.

W J H del

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SCHELHAMMERA UNDULATA. WAVE-LEAVED SCHELHAMMERA.

****

Class and Order.

HEXANDRIA MONOGYNIA.

(Nat. Ord.—MELANTHACEÆ. BR.)

Generic Character.

Perianthium 6-phyllum, petaloideum, campanulatum, æquale, deciduum; *foliola* unguiculata, æstivatione involuta, stamina segregantia. *Stamina* 6, basi foliolorum inserta. *Antheræ* posticæ. *Ovarium* 3-loc., loculis polyspermis. *Stylus* 1. *Stigmata* 3, recurva. *Capsula* 3-loc. 3-valv., valvis medio septiferis. *Semina* nonnulla, ventricosa. BR.

Specific Character and Synonym.

SCHELHAMMERA *undulata;* foliis amplexicaulibus ovatis (v. ovato-lanceolatis) undulatis, floribus subsolitariis, caule diviso, petalorum unguibus foveolatis. BR.

SCHELHAMMERA undulata. *Br. Prodr. Fl. Nov. Holl. p.* 274.

DESCR. *Root* fibrous. *Stem* from four to six inches high, slender, dichotomously branched. *Leaves* alternate, remote, ovate, according to Mr. BROWN, in the specimens that flowered at Kew, more inclining to lanceolate, waved or crisped at the margin, striated, the base sheathing. *Peduncles* terminal, one inch or an inch and a half long, bearing a single purple flower. *Segments* of the *Perianth* equal, lanceolate, striated. *Stamens* opposite to the petals: *filaments* pale: the *Anthers* a deep purple. *Pistil: Germen* spherical, three-lobed: *Style* longer than the stamens: *Stigmas* three, recurved. *Capsule* three-lobed, the lobes longitudinally wrinkled, opening with three valves, each

valve with the septum in the middle, bearing about six roundish *seeds* attached to a fleshy base.

I had the satisfaction of seeing this rare little plant flowering in the stove of the Kew Gardens, in September 1826. From that individual aided by a beautiful drawing* in the possession of WILLIAM TOWNSEND AITON, Esq. the accompanying figure was made.

The species was discovered in the vicinity of Port Jackson, New South Wales, by Mr. BROWN, who dedicated it, together with the *S. multiflora*, to G. C. SCHELHAMMER, a Professor of Jena. Seeds were sent from the Five Islands to Kew, by Mr. ALLAN CUNNINGHAM, in the year 1825.

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* This drawing was made in the month of May, so that the plant appears to have no fixed period of flowering.

Fig. 1. Segments of the Perianth and Stamens. 2. Pistil. 3. Capsule. 4. Capsule open. 5. Seed. 6. Section of ditto.—*Magnified.*

N. 2713.

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BUDDLEA BRASILIENSIS. BRASILIAN BUDDLEA.

****

Class and Order.

TETRANDRIA MONOGYNIA.

(Nat. Ord.—VITICES.)

Generic Character.

Cal. 4-fidus. *Cor.* 4-fida. *Caps.* bilocularis, dissepimentum e marginibus valvarum. *Semina* paleacea.

Specific Character and Synonyms.

BUDDLEA *brasiliensis;* foliis deltoideo-oblongis per petiolos decurrentibus connatis irregulariter crenato-dentatis, floribus verticillatis bracteatis, ramis tetragonis lanatis. *Graham MSS.*

BUDDLEA brasiliensis. *" Jacq. fil."—Spreng. Syst. Veg. v. 1. p. 430.*

DESCR. *Shrub* erect. *Stem* nearly round; *bark* brown and cracked. *Branches* opposite, decussating, four-sided, covered with a white wool, which, subsequently, peels off. *Leaves* opposite and decussating; when young, oblong, afterwards becoming wider at the base and more pointed, so as to be nearly deltoid, unequally dentato-crenated, broadly decurrent along the petiole, where they are quite entire, connate, soft, tomentose, especially beneath, and there white, green above, and reticulated. *Flowers* verticillate, the lowest whorl on two short, axillary footstalks. *Verticillus* many-flowered, leafy. *Bracteæ* small, pointed, green, placed on the outside of the whorls. *Calyx* persisting, green, covered with white down, four-cleft. *Corolla* orange-yellow, hairy within and without, least so on the upper surface of the limb; *tube* more than twice the length of the calyx: *limb* spreading, four-parted, the segments rounded. *Anthers* reddish, almost sessile, in the throat of the corolla; *pollen* pale-yellow. *Germen* very slightly hairy, oval: *style* filiform, at length exserted. *Stigma* rounded, lobular, deep green. GRAHAM MSS.

Communicated, along with the above description, by Dr. GRAHAM, from the Edinburgh Botanic Garden. The seeds were received from Russia, through the kindness of Mr. HUNNEMAN.

SPRENGEL has included it in his Systema Vegetabilium, under the name of B. *brasiliensis* of JACQ. Fil.; but I do not know in what work of JACQUIN it is described. SPRENGEL further says, it is the B. *Neemda*, *Hortulanorum*, and the B. *perfoliata* of HUMBOLDT. The latter it cannot be; for it is quite at variance with the description given in the *Nova Genera*.

It is said to be a native of Brazil and Mexico. The flowers are produced in the stove, in the month of November.

Fig. 1. Flower. 2. Pistil. 3. Stamen. 4. Leaf, from the lower part of the branches.—*All but fig.* 4 *magnified.*

Pub. by S. Curtis Walworth Feb. 1. 1827.

Swan. sc.

CROTALARIA DICHOTOMA. DICHOTOMOUS CROTALARIA.

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Class and Order.

DIADELPHIA DECANDRIA.

(Nat. Ord.—LEGUMINOSÆ. DIV. II. LOTEÆ. DE CAND.)

Generic Character.

Cal. quinquelobus, subbilabiatus, *lab. sup.* bi, *infer.* 3-fido. *Cor.* vexillum, cordatum, magnum, carina falcato-acuminata. *Filamenta* omnia connexa, vagina sæpius superne fissa. *Stylus* lateraliter barbato-pubescens. *Legumen* turgidum valvis ventricosis inflatum, sæpius polyspermum, pedicellatum. DE CAND.

Specific Character.

CROTALARIA *dichotoma;* fruticosa, diffusa, foliis ternatis cuneato-ellipticis pilosiusculis mucronatis, stipulis subulatis reflexis persistentibus, racemis subcapitatis oppositifoliis. *Graham MSS.*

CROTALARIA dichotoma. *Graham MSS.*

DESCR. *Stem* weak, round. *Branches* long, straggling, pubescent, slightly furrowed towards the top, subdichotomous, one of the limbs being generally a little thicker than the other. *Leaves* ternate, leaflets elliptical, mucronate, wedge-shaped at the base, rather longer than the petiole, and supported on very short, equal, partial footstalks, soft, covered with minute pubescence, very indistinct on the upper surface, bright green, and becoming mottled when fading, mid-rib strong; *petiole* half an inch long, furrowed, spreading at right angles to the branch. *Stipules* awl-shaped, reflected, persistent. *Racemes* opposite to the leaves, subtriquetrous, their flowers crowded towards the top, one occasionally half way up the peduncle. *Bracteæ* like the stipules, but less frequently reflected. *Calyx* bilabiate, hairy, segments pointed, green, upper lip two-parted, spreading, lower lip three-parted, segments parallel and closely applied to the keel. *Corolla* yellow, vexillum rounded, spreading, striated with deeper lines on the back, claw furrowed and hairy on its lower side; *alæ* involute, shorter than the vexillum; *carina* pointed, equal in length to the *alæ,* split at its base, its lower edge forming nearly a right angle. *Stamens* monadelphous; *filaments* very slender, five nearly as long as the style, and crowned with small, round, abortive *anthers,* five shorter, having oblong *anthers* of a deep yellow colour. *Germen* pubescent, flattened. *Style* turgid at the base, afterwards bent nearly to a right angle, filiform, hairy, persisting. *Stigma* small and pointed. *Legumen* covered with small, appressed hairs, inflated, nearly cylindrical, slightly furrowed above. *Seeds* numerous (about fourteen) kidney-shaped, and arranged in two rows, at least when young. Graham MSS.

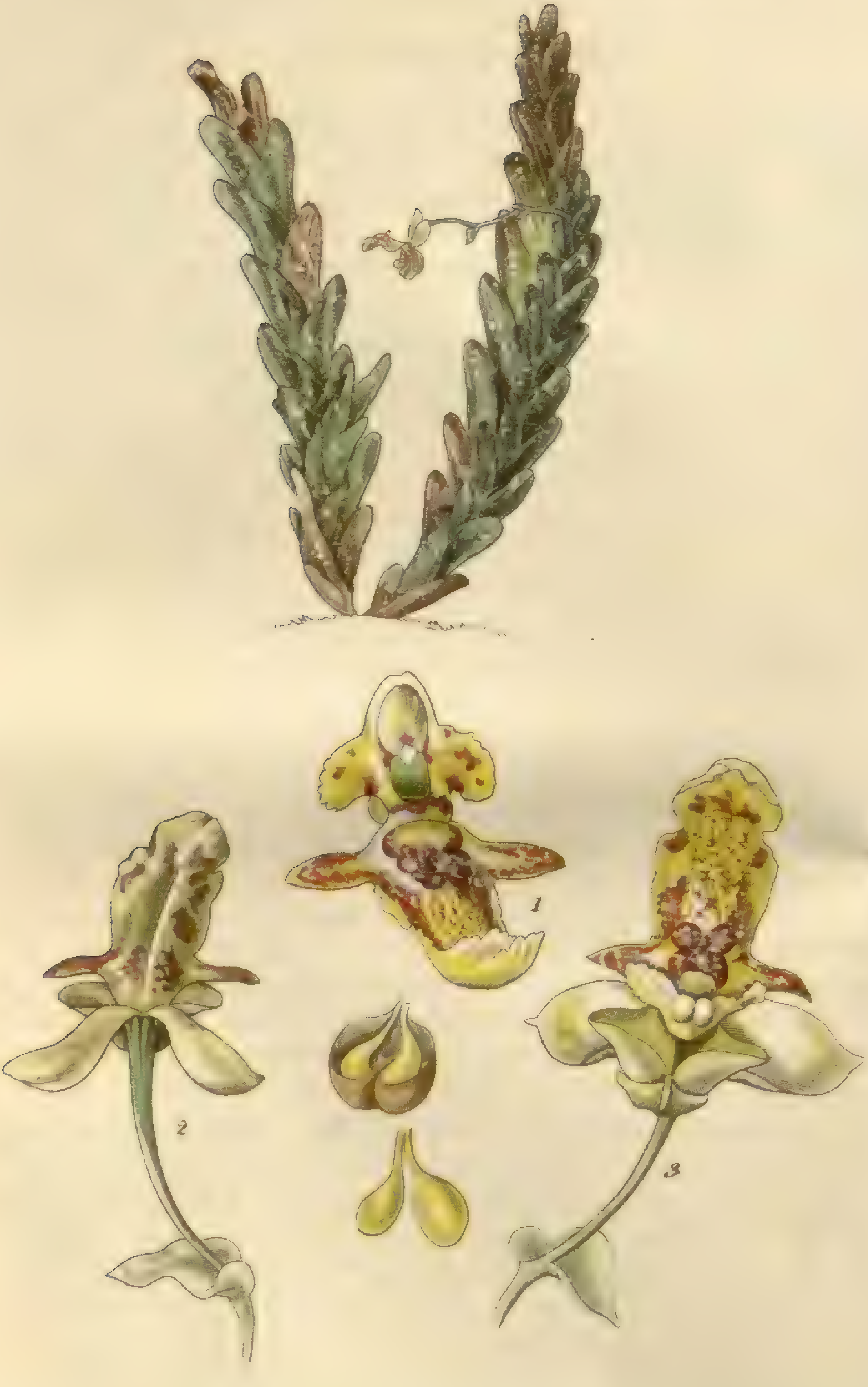
In De Candolle's *Prodromus Systematis Naturalis Regn. Veget.* one hundred and thirty-seven species of Crotalaria are described, and among those of the division, "*fol. palmatim compositis 3—7-foliolatis; foliis 3-foliolatis racemis oppositifoliis; stipulis setaceis aut nullis*" there are several, it must be confessed, that, in character, approach very nearly to the present species: but yet, that differ in some particular; so that I dare not venture to say that any is the same, without fuller characters or reference to the figures. Indeed, such extensive Genera can scarcely be expected to be well illustrated without plates.

It is, perhaps, the *Crot. lupulina* of De Candolle, but that should have ovate legumes. Ours, like it, is a native of Mexico, the seeds having been brought from that country by Mr. Mair, and by him communicated to the Botanic Garden of Edinburgh. The plants have been kept in the stove, and have flowered for two successive summers.

Wild specimens were kindly given to me, by Charles Mackenzie, Esq. our late Consul at Mexico; and I have an individual, from the Rev. Lansdown Guilding, of St. Vincent, that I can only distinguish from our plant, by its somewhat larger leaves. I may observe, that my Mexican specimens, seem to be rather biennial, than fruticose.

Fig. 1. Flower. 2. Stamens with the Pistil. 3. Legume.—*Magnified.*

N. 2715.



Pub. by S. Curtis Walworth Feb. 1. 1827.

W.J.H. del.

Swan Sc.

LOCKHARTIA ELEGANS. BEAUTIFUL LOCKHARTIA.

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Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ.)

Generic Character.

Labellum superum, trilobum, tuberculatum, ecalcaratum. *Petala* duo, lateralia, patenti-reflexa, 3-conniventia. *Columna* alata. *Antheræ* infra apicem columnæ, opercularis. *Massæ pollinis* 2, cereaceæ.

Specific Name.

LOCKHARTIA *elegans*.

DESCR. A parasite on the decaying trunks of trees. *Stems* three to five inches high, clothed with numerous, closely placed, distichous, equitant, ovato-oblong, very obtuse *leaves*, obscurely striated, each from half to three-quarters of an inch long, smallest at the base and at the summit. *Flower* pedunculated, from the axil of one of the upper leaves. *Peduncle* slender, drooping, with one or two ovate *bracteæ*, an inch long, single-flowered. *Petals* oblong-ovate, concave, pale yellow, the two lateral ones patent and even deflexed, the *upper* (but from the unusual direction of the flower inferior) immediately covering, and connivent with the two inner ones. *Lip* erect, and hence superior, oblong, three lobed, the two lateral lobes lanceolate, standing out at right angles, the middle one very large, obscurely three lobed, the central one notched, curved upwards. The colour is yellow, variously spotted with red, the substance thick and fleshy, except at the extremity, the upper surface tuberculated. *Column* large, yellow, spotted with red, having, on each side, a large crescent-shaped, serrated, deflexed wing. *Anther* in front, near the apex of the column, operculiform, two celled, having two ovate waxy *pollen masses*.

The above description, and the annexed engraving of this singular and highly interesting plant, are made from a beautiful drawing in the possession of W. T. AITON, Esq. That drawing was done from a specimen that flowered in the stove of the Royal Gardens at Kew, and which was sent, at the request of his Excellency Sir RALPH WOODFORD, by Mr. DAVID LOCKHART, from the Island of Trinidad.

Not finding the plant to agree with the character of any already defined genus, I am sure I am complying with what would be the wish of Mr. AITON, in naming it after the very zealous and most deserving Botanist, who has introduced it into our gardens, and who, under the direction of the governor, so ably conducts the Botanic Garden at Trinidad. For this important situation (useful plants and trees being there especially cultivated) he is fitted no less by education, than by his travels. Instructed by Sir RALPH WOODFORD, he has visited many parts of South America, particularly the Caraccas, and the interior of Demarara: and let it be remembered, that he is one of the few of our brave countrymen, who returned from the disastrous Congo expedition, under Captain TUCKEY, and the only survivor of the party by whom the river, above the falls, was examined. It was from Mr. LOCKHART, that Mr. BROWN, as that gentleman tells us, in his inestimable Memoir on the plants of that expedition, received valuable information concerning many of the specimens, and also respecting the esculent plants, observed on the banks of the Congo.

Fig. 1 Flower deprived of its Petals. 2. Back view of a Flower. 3. Front view of ditto. 4. Anther. 5. Pollen Masses.—*Magnified.*

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Pub. by S. Curtis Walworth Feb. 1. 1827.

W.J.H. del

GILLIESIA GRAMINEA. GRASSY-LEAVED GILLIESIA.

****

Class and Order.

MONADELPHIA TRIANDRIA. (TRIANDR. MONOG. LINDL).

(Nat. Ord.—GILLIESIEÆ. LINDL.)

Generic Character.

Involucr ? pentaphyllum, foliolis duobus interioribus minoribus. *Perianth.* triphyllum, foliolis basi staminum unitis, inferne sæpe appendiculatis, superioribus lanceolatis, inferiore labelliformi carnoso. *Fil.* apice libera, dentibus (plerumque) tribus abortivis. *Caps.* trilocularis, trivalvis, polyspermis, valvis medio septiferis.

Specific Name and Synonym.

GILLIESIA *graminea.*
GILLIESIA graminea. *Lindl. in Bot. Reg. t.* 992.

DESCR. *Bulb* oblongo-ovate, tunicate, fibrous at the base, where it likewise produces its new bulb, as in the genus IXIA. *Leaves* two from each root, long, linear, tapering, carinate at the back, grooved in front. *Scape* shorter than the leaves, terete, bearing at the extremity an umbel of few flowers, having two opposite, unequal, lanceolate bracteas at the base. *Pedicel* two to three inches long, bearing a solitary green *flower,* of which the divisions are all more or less margined with red. *Involucre* (which seems to hold the situation of a calyx) of five leaves, which are subspirally imbricated before expansion, drooping and spreading horizontally : the three outer ones ovate, of which the two uppermost are the smallest : the two inner, or lateral ones opposite, broadly ovate, all sometimes obscurely toothed, nerved, red at the margin.

Perianth, if it may be so called, since it is, especially in bud, much shorter than the organs of fructification, springing from the fleshy base of the united stamens, of three leaflets; the two upper the smallest, ovato-lanceolate, nearly erect, often with a tooth at the base (as at fig. 4); the lower, or anterior one, large, labelliform, thick and succulent, notched at the extremity, the margin thickened and revolute, having two curved linear teeth-like processes, one on each side, at the base, which stand forward. All these parts, when viewed under a magnifier, appear minutely papillose. *Stamens* united into a white, fleshy, slipper-shaped cup, embracing the *Germen*, with a red spot in front and a sulcus, the mouth oblique, furnished with six teeth (the free portion of the filaments) whereof three, in front, bear broadly-oval, yellow *anthers*, whilst the posterior three are abortive, or sometimes wanting altogether. *Germen* globose, three celled, many seeded. *Style* cylindrical: *Stigma* subtriangular. *Capsule* three valved, three celled: dissepiments occupying the centre of the valves and bearing a row of seeds on each side.

It will be seen that I have taken a view of the structure of the flower in this most curious plant rather different from that which has been given by my friend Mr. Lindley, in his admirable account of the genus, in the Botanical Register. If I am correct in my idea, then, the number of parts in the flower corresponds sufficiently with that which prevails in the Monocotyledonous tribes. The pistil has the ternary division, both in the germen and the style. The cup, formed by the stamens, has clearly six divisions or teeth, three bearing anthers, and three imperfect. Around this body, and, evidently, springing from its base, are constantly three processes or leaflets (one having the form of the labellum in an Orchideous plant) which are regularly arranged round the axis of the flower, and which appear to me, collectively, to constitute the perianth. But around this there are, as Mr. Lindley justly observes, four, three, or two other processes, bearing no relation, either in their number or arrangement, to the outer segments or Monocotyledonous perianth.

Now, upon a careful dissection of many specimens, I have universally found, that these small processes have their origin from the base of the segments of the perianth; and hence, as well as from the fact of their varying in number and in form, I am rather disposed to consider these as teeth-like appendages to the perianth, and, perhaps, even a kind of monstrosity, similar to what Mr. Lindley has observed to take place in the stigma and style. The outer covering of the flower is, perhaps, justly defined, by that author, to be bracteas, although its appearance, its close proximity to the flower, and the full expansion of the latter so soon as the bracteas are laid open, would seem to militate against such an opinion; add to which, what we have here called the perianth, never, even in bud, covers the organs of fructification : and, indeed, though the quinary divisions would seem incompatible with its being considered as a floral covering; yet, if we look upon the lower large segment, which we may do, as two united, the ternary series will be complete. It will be seen by the representation of the bud, at fig. 1, that this large (double) segment and a smaller one constitute the outer series, as much as the remaining three do the inner one*.

Our plant, in the Glasgow Botanic Garden, which had been sent from Valparaiso, by the kindness of our estimable correspondent, Mr. CRUICKSHANKS, flowered readily in the stoves, in the month of October, and, perhaps, in greater perfection, under a cool frame. At best, however, the GILLIESIA must be regarded rather as a curiosity, than an ornament. The infloresence bears, at first sight, a most striking resemblance to an *Orchideous* plant; its bulb, foliage, seed, and seed vessel, to the *Asphodeleæ;* and near this latter order, if not among it, I think it should be placed. Its situation, in the artificial arrangement, may be near *Sisyrinchium,* on account of the united stamens.

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* Should this suggestion prove correct, and if the double perianth, or, as Mr. LINDLEY calls it, the third series to the usual senary division of Monocotyledones, be to great an anomaly; then, may we not consider that the three inner bodies, with their occasional tooth-like appendages, as glandular excresences, arising from the united base of the stamens ? Their whole structure is cellular, destitute, as Mr. LINDLEY observes, of spiral vessels, and would seem to favour such a notion : we must otherwise allow, that this supposed floral covering never shelters and protects the stamens and pistils at any period of its growth.

Fig. 1. Bud. 2. Outside view of a Flower, with the Involucre. 3. Inner ditto. 4. Flower taken from a Bud, side view. 5. Back view of the Stamens, including the Pistil, and shewing the three abortive Filaments. 6. Front view of an expanded flower. 7. Side view of the same (*a.* The Labellum, with two processes. *b.* The two upper Segments of the Perianth. *c.* The Stamens. *d.* The Style and Stigma.) 8. Stamens and Labellum. 9. Anther. 10. Pistil. 11. Section of the Germen. 12. Root. 13. Capsule. —*All but the Root more or less magnified.*

N. 2717.

Pub by S. Curtis Walworth Feb 1 1827.

DEERINGIA CELOSIOIDES. CELOSIA-LIKE DEERINGIA.

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Class and Order.

PENTANDRIA MONOGYNIA.

(Nat. Ord.—AMARANTHACEÆ.)

Generic Character.

Perianth. 5-partitum. *Stamina* 5, basi in cyathulam edentulam connata. *Antheræ* biloculares. *Stylus* tripartitus. *Bacca* polysperma.

Frutices *glabri, debiles, supra arbores et frutices decumbentes.* Folia *alterna.* Spica *terminales et e summis alis.* Flores *tribracteati.* Pericarpium *baccatum inflatum.* BR.

Specific Name and Synonyms.

DEERINGIA *celosioides.*
DEERINGIA celosioides. *Brown Prodr. Fl. Nov. Holl. p.* 413.
CELOSIA baccata. *Retz. Obs.* 5. *p.* 23. *Willd. Sp. Pl. v.* 1. *p.* 1202.

DESCR. A glabrous plant, producing, as cultivated in the open air at Kew, green, herbaceous, much branched, straggling *stems,* such as require artificial support. *Leaves* alternate, ovate, acuminate, thin, entire, nerved: *petiole* slender, about an inch long. *Spike* long, slender, terminal upon the branches, and also springing from the axils of the superior leaves, bearing many small, greenish, sessile *flowers,* somewhat like those of RIVINA *humilis. Bracteæ* three, small, lanceolate. *Perianth* five-partite; the segments oval, concave, greenish, spreading. *Stamens* five, about as long as the perianth, and opposite to the segments, united at the base into a disk surrounding

the germen: *Anthers* oval, two-celled, yellow. *Pistil; Germen* roundish, ovate: *Style* three-partite: *Stigmas* obtuse. *Fruit* a bright red, hollow or inflated, three-lobed *berry*. *Seeds* upon erect, short *seedstalks*, all occupying the centre of the base of the pericarp, kidney-shaped, compressed, deep black and shining. *Embryo* curved, occupying the circumference of the *albumen*.

Introduced, by W. T. AITON, Esq. to the Royal gardens at Kew, from New Holland, where it was noticed by Mr. BROWN, and mentioned in the Prodromus, Fl. Nov. Holl. as probably distinct from the Indian species described by VAHL, in having the flowers larger, and several seeds in each berry. As I have not seen the Indian plant, I am unable to settle this point.

At Kew, this plant flourishes in great perfection during the summer months, planted in a good exposure in the open air, in the front of one of the stoves. The flowers are as devoid of beauty as those of RIVINA *humilis*, and the berries, though much larger, are of a less brilliant red. The whole plant turns almost black in drying.

Our figure was drawn in the month of October, from specimens kindly given to us by Mr. AITON. In November the frosts generally cut the plant almost down to the ground.

Fig. 1. Flower-bud. 2. Expanded Flower. 3. Berry. 4. Section of ditto, shewing the situation of the Seeds. 5. Seed. 6. Section of ditto to shew the Embryo and Albumen.—*Magnified*.

N. 2718.

Pub. by S.Curtis Walworth Feb. 1.1827.

W.J.H. del.

ASTER FRUTICOSUS. SMALL SHRUBBY CAPE ASTER.

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Class and Order.

SYNGENESIA POLYGAMIA SUPERFLUA.

(Nat. Ord.—COMPOSITÆ.)

Generic Character.

Recept. nudum. *Pappus* simplex. *Cor.* radii plures 10. *Cal.* imbricati squamæ inferiores (sæpe) patulæ.

Specific Character and Synonyms.

ASTER *fruticulosus;* fruticosus, valde ramosus foliis subfasciculatis lineari-spathulatis punctatis integerrimis, pedunculis solitariis ex apice ramorum unifloris elongatis, calycibus imbricatis squamis linea dorsali elevata.
ASTER fruticosus. *Linn. Sp. Pl. p.* 1225. *Thunb. Fl. Cap. ed. Schult. p.* 687.
ASTER fruticulosus. *Willd. Sp. Pl. v.* 3. *p.* 2018. *Ait. Hort. Kew. ed.* 2. *v.* 5. *p.* 49.
ASTER africanus frutescens &c. *Comm. Hort. v.* 2. *t.* 27.
(β.) Aster maritimus fruticosus Hyssopi foliis confertis, flore albo, &c. *Pluk. Mantiss. p.* 29. *t.* 340. *f.* 19.

DESCR. *Stem* woody, much branched in a zigzag manner, from eight inches to a foot or a foot and a half high, according to COMMELIN. *Leaves* upon numerous young branches, but so short in general, that the leaves appear to be fasciculated; they are from half to three quarters of an inch long, spreading, linear, approaching to spathulate, impressed with dots, the margin quite entire and recurved. *Flowers* solitary, upon terminal, solitary, naked, very slender peduncles. *Involucre* ovato-cylindrical, of several linear-oblong, closely imbricated scales, slightly ciliated at the top, at the back having an elevated, hard, callous, longitudinal line or ridge. *Florets* of the *ray* purple, linear, acute, in the cultivated state, with one or two serratures at the margin. *Germen* oblong, hairy. *Pappus* rough. *Florets* of the *centre,* tubular, yellow. *Germen* and *pappus* as the florets of the circumference.

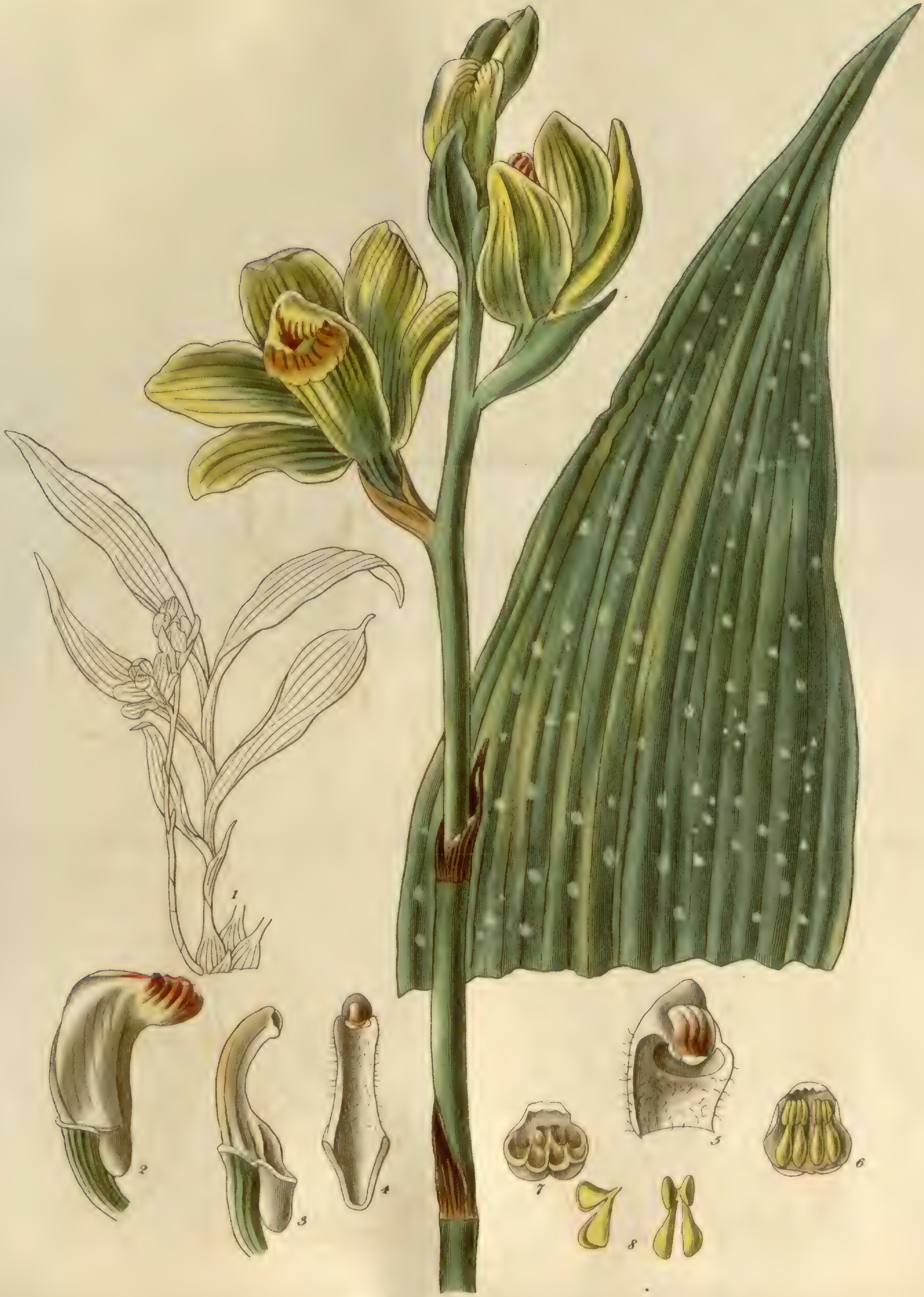
This appears to have been cultivated, according to PHILIP MILLAR, so long ago as 1759, in the English gardens. It is certainly a very desirable greenhouse plant.

Our figure was made from a drawing in the possession of W. TOWNSEND AITON, Esq., from plants introduced by Mr. BOWIE from the Cape of Good Hope. It flowers in May.

Our native dried specimens have not the serratures in the florets of the circumference which are here represented.

Fig. 1. Leaves. 2. Two Scales of the Involucre. 3. Floret of the circumference. 4. Floret of the centre. 5. Portion of the Pappus.—*Magnified.*

N. 2719



Pub by S. Curtis. Walworth Feb. 1. 1827.

BLETIA WOODFORDII. WOODFORDIAN BLETIA.

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Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ.)

Generic Character.

Labellum sessile, cucullatum; nunc basi calcaratum. *Petala* 5, distincta. *Columna* libera. *Massæ* pollinis 8 v. 4, bilobæ. BR.

Specific Character.

BLETIA *Woodfordii;* labello calcarato trilobo, lobis involutis marginibus crenato-undulatis, caule folioso basi bulboso, scapo radicali, (foliis maculatis).

DESCR. Parasitic. *Bulbs* ovato-rotundate, bearing leafy *stems,* formed of the sheathing bases of the leaves. *Leaves* three to four, lanceolate, plicate, green, variegated with pale spots. *Scape* radical, two feet or more high, terete, glabrous, jointed at distant intervals; with purplish-brown sheathing scales at the joints. *Flowers* large, in racemes terminating the scape, each subtended by a lanceolate, green *bractea.* *Petals* five, nearly equal, elliptical, concave, spreading, yellow-green, striated, four lateral and one terminal. *Lip* quite exposed, erecto-patent, nearly as long as the petals, large, involuto-cylindrical, white, thick, fleshy, obsoletely veined, embracing the column, with a short, white, obtuse spur at the base, the apex standing forward, of three broad, yellow-brown, completely involute lobes, which are waved and crenate at the margins. *Column* nearly as long as the lip, curved forwards, cylindrical at the back, the front grooved and hairy, white. Sunk into the apex, as it were, is the *Anther*, convex, white, operculiform, containing four, two-lobed, waxy, obovate, yellow *pollen masses*.

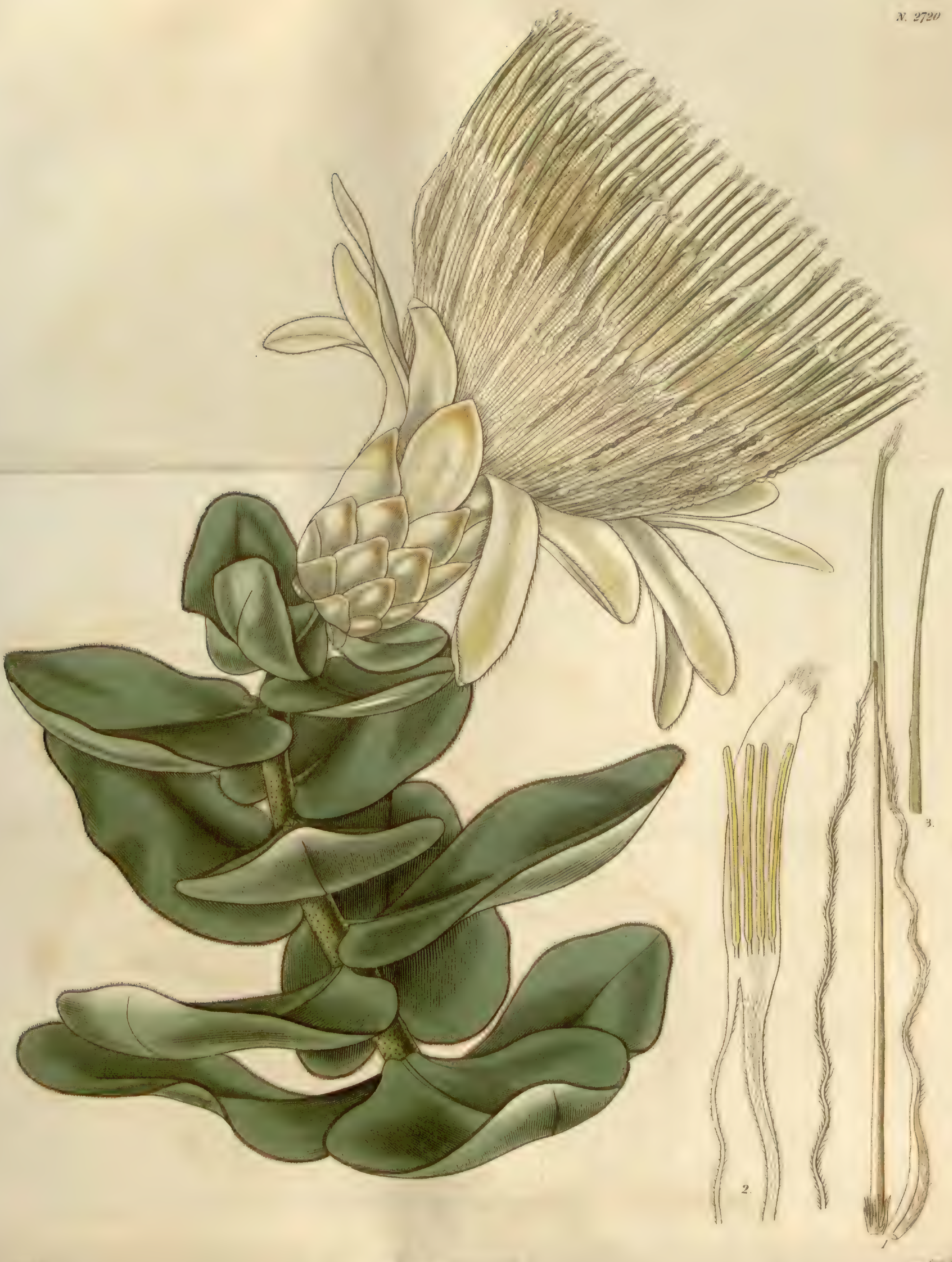
This fine species of Bletia was communicated, in 1820, from Trinidad, to the Royal gardens at Kew, by Sir Ralph Woodford, to whom I am anxious to dedicate it, as to a gentleman through whose love of science and liberality, our stoves are enriched by many choice productions, and to whom I am, individually, indebted for a most valuable Herbarium of Trinidad plants.

As a species, it is abundantly distinct from any described individual of the genus.

The engraving was made from a drawing in the possession of W. Townsend Aiton, Esq.

Fig. 1. Reduced outline of a Plant. Side view of the lip, enclosing the Column and the Germen. 3. Column and Spur. 4. Front view of the Column, with the Spur cut open. 5. Summit of the Column, with the Anther and Stigma. 6. Interior view of the Anther, with the pollen masses. 7. Anther-case. 8. Pollen Masses.—*All but fig.* 1. *more or less magnified.*

N. 2720



W.H. delt.

Pub by S. Curtis. Walworth March 1.1827.

Swan Sc.

PROTEA LONGIFLORA. LONG-FLOWERED CREAM-COLOURED PROTEA.

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Class and Order.

TETRANDRIA MONOGYNIA.

(Nat. Ord.—PROTEACEÆ.)

Generic Character.

Cal. bipartibilis inæqualis, labii latioris laminis staminiferis cohærentibus. *Stylus* subulatus. *Stigma* angustius cylindraceum. *Nux* undique barbata, stylo persistenti caudata. *Receptaculum* commune, paleis abbreviatis persistentibus. *Involucrum* imbricatum, persistens. BR.

Specific Character and Synonyms.

PROTEA *longiflora;* foliis ovato-oblongis sessilibus basi subcordatis simplicibusve, ramis tomentosis, involucro sericeo-ciliatis, calycis aristis brevissimis, stylo glabro involucro longiore. BR.

PROTEA longiflora. *Lam. Encycl. v.* 5. *p.* 650. *Br. in Linn. Trans. v.* 10. *p.* 76. *Spreng. Syst. Veget. v.* 1. *p.* 461.

PROTEA lacticolor. "*Salisb. Parad.* 27."

PROTEA ochroleuca. *Smith Exot. Bot. v.* 2. *p.* 43. *t.* 81.?

DESCR. The plant from which the annexed figure was taken forms a small *tree,* seven to eight feet high, with rather few, downy branches, and numerous spreading, broadly-ovate, obtuse, slightly concave, waved, sessile *leaves,* sometimes cordate at the base: scarcely veined, midrib strong at the base, slightly sericeo-pubescent, the margin tomentoso-sericeous, reddish: the substance, especially of the older ones, thick and rigid: the *colour* somewhat of a glabrous green. *Involucrum* much longer than any of the leaves, yet shorter than the flowers, between cup-shaped and funnel-shaped, externally beautifully silky; the lower part formed of cordato-ovate, closely imbricated, erect *scales;* the upper scales, gradually longer, oblong, subspathulate, spreading, and beautifully margined, especially towards the point, with a delicate silky fringe; their colour, too, is yellowish white, the tips mostly brownish. *Calyx* four inches long, subulate, opening, from below, upwards, to three-fourths of its length, into two, unequal, silky, cream-coloured, waved, filiform segments, the upper part enclosing the stamens, entire, forming a vagina or green sheath around the style, tipped with a silky pencil of hairs. The calyces (or Perianths), sixty to seventy in number, collectively form a cup-shaped ray of a single series, and exhibit a most beautiful appearance. *Germen* with a brown, silky fringe. *Style* filiform, brownish on one side, quite glabrous. *Stigma* a little inclined, subulate, very slender, obtuse.

From the greenhouse of the Glasgow Botanic Garden, where it bears its fine blossoms, of that beautiful cream-coloured white which we see in the flowers of the MAGNOLIA, in November. If the figure of Sir JAMES SMITH, in Exotic Botany, referred to by Mr. BROWN, be the same (and it differs materially in the relative length of the flowers with the involucre, in the radiated tip to the calyces, and acute leaves) then it was, probably, introduced to this country by Mr. HIBBERT. Mr. BROWN mentions it as existing in the Royal Gardens at Kew, in 1809.

Probably too, it is the species alluded to by Dr. SIMS, at t. 1717, of the Old Series of this Magazine, under PROTEA *latifolia,* as " a variety of that species, with greenish-white flowers," which was cultivated in the Hammersmith nursery. That species, indeed, (P. *latifolia*) has very much the habit of the present plant, scarcely differing but in the rose-coloured flowers and the sericeous style.

Fig. 1. Flower. 2. Upper portion of the Calyx laid open, to shew the Stamens. 3. Stigma.—*Magnified.*

N. 2721

Pub. by S. Curtis Walworth. March 1. 182

–W.J.H. delt–

– Sw

DICHORISANDRA OXYPETALA. SHARP-PETALED DICHORISANDRA.

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Class and Order.

HEXANDRIA MONOGYNIA.

(Nat. Ord.—COMMELINEÆ.)

Generic Character.

Calyx triphyllus, inferus. *Cor.* tripetala. *Stam.* 5—6, in duas phalanges disposita, antheris lanceolatis, erectis, loculis parallelis. *Caps.* corolla baccante induta, trilocularis, polysperma. *Nees. et Mart.*

Specific Character.

DICHORISANDRA *oxypetala;* racemo terminali, pedicellis subbifloris, petalis ovatis acutis, foliis ellipticis basi apiceque attenuatis, floribus hexandris.

DESCR. Apparently a small *plant,* with an oblique, simple or forked, rounded *stem,* clothed with the cylindrical, striated, slightly pubescent sheaths of the leaves: scaly below. *Leaves* confined to the upper part of the stem, about five on each stem or branch, alternate, elliptical, attenuated both at the base and at the extremity, entire, striated, the sides a little incurved, very glabrous, except a little pubescence at the base, on the underside. *Raceme* three to four inches long; the *rachis* stout, rather zigzag, the *pedicels* remote, two-flowered; the upper ones very short, the lowest one long, deflexed; *pedicels* and *flowers* with small brown ovate bracteæ. *Calyx* of three, ovate, spreading, greenish, veined *leaflets.* *Corolla* of three, ovate, acute, spreading, reddish purple, veined *petals,* with a white spot at the base. *Stamens* six, three interior, and three exterior, erect: *filaments* very short: *anthers* linear-oblong, purple, whitish at the base, opening by two pores at the extremity. *Pistil: Germen* spherical; *style* filiform; *stigma* obtuse.

DICHORISANDRA is a genus that was established upon the D. *thyrsiflora,* by MIKAN, in his Delectus Flora et Faunæ Brasiliensis; and three more, D. *gracilis, radicalis,* and *puberula,* were afterwards, together with an amended character of the genus, published by Dr. NEES and Dr. MARTIUS, in the 11th vol. of the Nov. Act. Nat. Cur. From all these our plant is sufficiently distinct in the form of its petals.

Fig. 1. Anther. 2. Pistil.

Pub by S. Curtis, Walworth [illegible]

JUSTICIA SPECIOSA. PURPLE-FLOWERED EAST-INDIAN JUSTICIA.

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Class and Order.

DIANDRIA MONOGYNIA.

(Nat. Ord.—ACANTHACEÆ.)

Generic Character.

Cal. æqualis, 5-raro 4-partitus. *Corolla* valde irregularis, bilabiata vel ringens, labio inferiore diviso. *Stamina* 2, antherifera. *Antheræ* biloculares, loculis insertione sæpius inæqualibus. *Filamenta* sterilia nulla v. obsoleta. *Ovarii* loculi dispermi. *Dissepimentum* adnatum. *Semina* retinaculis subtensa. BR.

Specific Character and Synonym.

JUSTICIA *speciosa;* perennis, erecta, foliis ovatis subcordatis petiolatis vix serratis glabris, pedunculis axillaribus terminalibusque proliferis paucifloris, bracteis involucratis duplicibus involucro externo tetraphyllo 3-floro, corolla bilabiatâ tubo curvato torto, labio superiore tridentato.

JUSTICIA speciosa. *Roxb. in Fl. Ind. v.* 1. *p.* 123.

DESCR. A rather tall spreading *shrub,* the stem and old branches ash-coloured, the younger branches green, glabrous, rounded, scarcely striated. *Leaves* opposite, petiolated, ovate, somewhat acuminated, the lower and larger ones subcordate, and slightly crenate, dark green above, paler beneath; the nerves oblique, prominent beneath.

Peduncles axillary and terminal, often proliferous, sometimes wanting; when present, generally very long, leafless. *Bracteæ,* constituting a double *involucre,* ciliated at

their margins, of which the outer is three-flowered, composed of four leaflets, two being oblong, and two spathulato-oblong, the inner or partial involucre also consists of four, upright, lanceolate, smaller leaflets surrounding each flower. *Calyx* small, of five deep, linear, acute segments. *Corolla* externally pubescent, with a very long, pale, curved, remarkably twisted, purplish *tube*. *Lips* two, elliptical, oblong; the upper one (become so by the curvature of the tube) with three minute teeth at the extremity; the lower entire (two-toothed. Roxb.). Both are of a deep, rich, carmine purple, the upper lip with one large, and several smaller deep spots at the base. *Stamens* two; *Filaments* much exserted; *Anthers* of two obliquely placed cells. *Pistil: Germen* ovate, with a fleshy annular disk; *Style* as long as the stamens; *Stigma* obscurely bifid.

The first information I had of this charming species of Justicia, and which I cannot doubt is justly said by Dr. Roxburgh to be " one of the greatest ornaments of the forests in the interior of Bengal," where it is a native, was from Mr. J. F. Bunbury, of Barton Hall, Suffolk, who communicated to me a living plant, as well as fine flowering specimens from his mother, Lady Bunbury's collection at that place.

The seeds were received by Lady Bunbury from St. Helena, where, in all probability, the plant was introduced from India, since it has been long cultivated in the Botanic Garden, Calcutta. I possess specimens from Dr. Carey, of Serampore; and the individual from which the accompanying drawing was taken, came from the stove of Mrs. Edward Cropper, of Toxteth Park, near Liverpool.

Not only is the colour of the flowers very brilliant, but the flowers themselves are so large and so numerous upon the plant, that, perhaps, scarcely any species of the genus is more deserving of a place in our collections.

Fig. 1. Anther. 2. Calyx and Pistil. 3. Germen. 4. Stigma.—*Magnified.*

N. 2723

Pub. by S Curtis Walworth March 1 1827

– [illegible] del. –

BEGONIA UNDULATA. WAVED-LEAVED BEGONIA.

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Class and Order.

MONŒCIA POLYANDRIA.

(Nat. Ord.—BEGONIACEÆ.)

Generic Character.

MASC. *Cal.* 0. *Cor.* polypetala, petalis plerumque 4, inæqualibus.

FŒM. *Cal.* 0. *Cor.* petalis 4—9, plerumque inæqualibus. *Styli* tres, bifidi. *Caps.* triquetra, alata, trilocularis, polysperma.

Specific Character.

BEGONIA *undulata;* fruticosa, foliis inæqualiter cordatis undulatis integerrimis glabris nitidis, capsulæ alis rotundatis æqualibus. *Graham MSS.*

BEGONIA undulata. *Otto.*

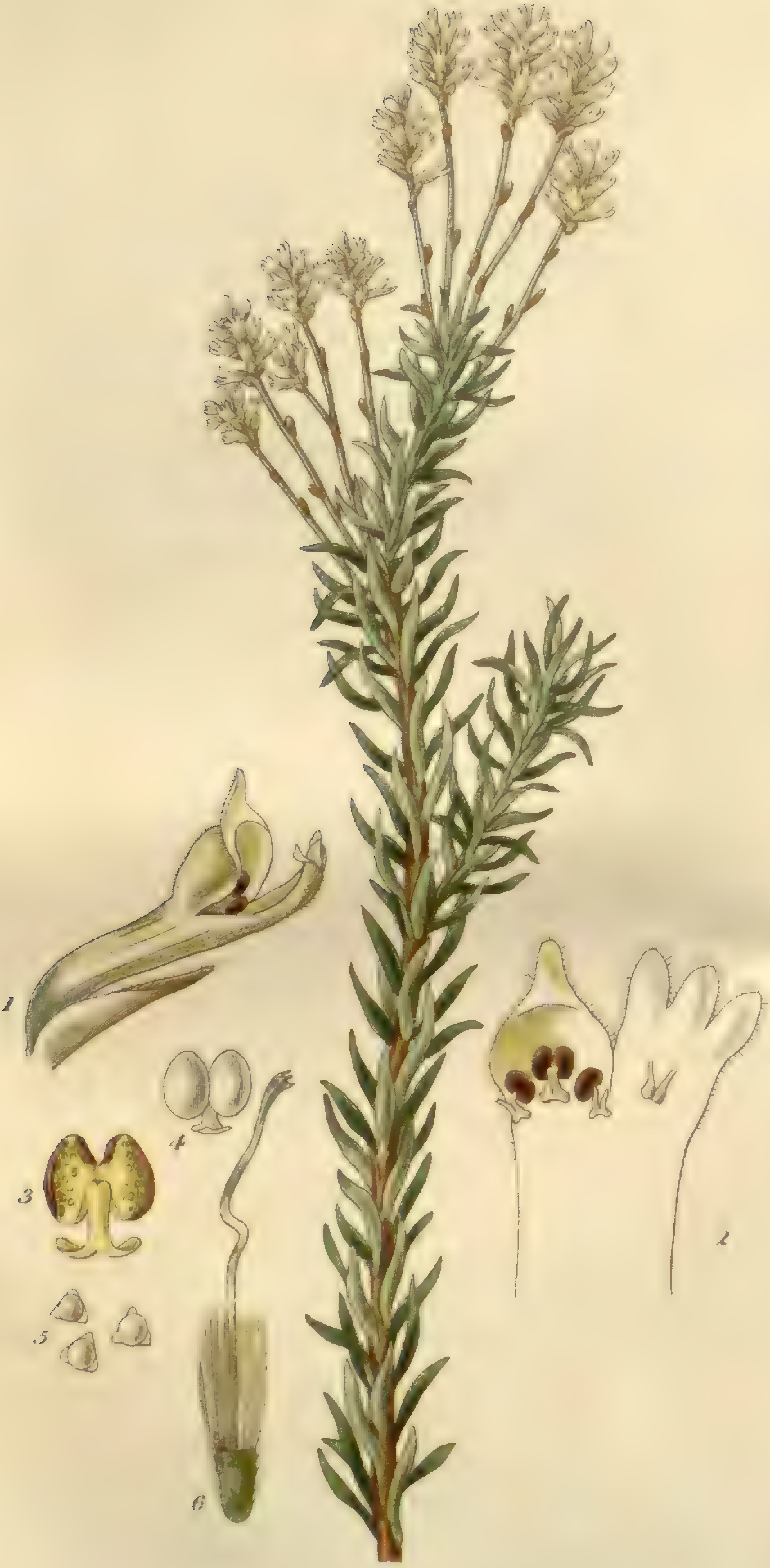
DESCR. *Stem* erect, turgid below, tapering upwards, annular; when young, slightly hispid, green, and having numerous small oblong white spots; when older, glabrous, and of a reddish grey colour, branched; *branches* axillary and alternate. *Leaves* petioled, alternate, distichous, unequally cordate, smooth and shining, undulate, acuminate, of a full green on the upper surface, paler and minutely dotted below, three inches long, the edges occasionally reddish, especially when young and callous, quite entire, but having a dot like an obsolete tooth at the termination of each vein; *petioles* hispid, especially on the older branches, a quarter of an inch long. *Stipules* varying in size and shape, pointed, transparent, reddish, and spotted like the stem, caducous. *Panicle* supported on peduncles about half the length of the leaves, dichotomous, smooth and shining. *Bracteæ* unequal, shorter than the pedicel, pellucid, colourless.

Flowers white: *Cor*. of the *male* of four petals, of which the two outer are largest, cordate; that of the *female* of five petals, the largest about one-third of the length of the wings of the capsule: wings of the *capsule* rounded, tapering towards the pedicel. *Stigmata* convolute, pubescent, with two prominent angles on each, yellow. *Stamens* numerous, yellow. *Seeds* very numerous, covering the projecting wings of their green receptacles. GRAHAM.

Communicated with the above description by Professor GRAHAM, from the stove of the Botanic Garden at Edinburgh. That gentleman received it, with the name here adopted, from Mr. OTTO, of Berlin, with the information, that it was a native of Brazil. It seems to be quite distinct from any hitherto published.

Fig. 1. Male Flower. 2. Female Flower. 3. Transverse section of the Germen.

N. 2724



Pub by S. Curtis Walworth March 1.1827

— W.J.H. del. —

CONOSPERMUM TAXIFOLIUM. YEW-LEAVED CONOSPERMUM.

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Class and Order.

TETRANDRIA MONOGYNIA.

(Nat. Ord.—PROTEACEÆ.)

Generic Character.

Perianth. tubulosum, ringens: lacinia suprema basi fornicata. *Antheræ* tres inclusæ: laterales dimidiatæ: superior biloba; primum cohærentes, lobis proximis vicinarum loculum constituentibus! *Stigma* liberum. *Nux* obconica, papposa.

Frutices. Folia *sparsa, integerrima, plana, rariusve filiformia. Spicæ axillares, v. terminales, compositæ, sensim florentes inde corymbosæ.* Flores *solitarii, sessiles, unibracteati, albi v. cærulescentes. Perianthium deciduum. Bractea cucullata, persistens.* BR.

Specific Character and Synonyms.

CONOSPERMUM *taxifolium;* foliis lanceolato-linearibus acutis mucronatis tenuissime pubescentibus verticalibus basi tortis, pedunculis axillaribus. BR.

CONOSPERMUM taxifolium. *Smith in Rees Cycl. Br. in Linn. Trans. v.* 10. *p.* 154. *Br. Prodr. Fl. Nov. Holl. v.* 1. *p.* 369. *Sieber Fl. Nov. Holl. n.* 43.?

" CONOSPERMUM falcifolium. *Knight et Salisb. Prot.* 95?"

DESCR. An erect twiggy *shrub,* with its stem and few branches more or less pubescent; sometimes glabrous. *Leaves* numerous, scattered, rigid, from one half to three quarters of an inch long, linear-lanceolate, with a very sharp point, somewhat obliquely twisted, erecto-patent,

pubescent or glabrous. The *peduncles* are axillary, arising singly from several of the upper leaves; so that taken collectively, they form a sort of corymb. Each *peduncle* is simple or forked, pubescent, furnished with remote, ovate bracteas, and terminated by several sessile, pubescent, whitish flowers, each having an ovate, pubescent, and ciliated bractea at its base. *Perianth* tubular, slightly curved, two-lipped at the extremity; the *upper lip* entire, ovate, gibbous or fornicate at the back below the point; the *under lip* trifid; the segments ovate. *Stamens* four, placed just within the mouth of the tube: *Filaments* double; three alone bearing anthers, and these are placed in the upper lip of them; the two lateral ones have one lobe, and the central one two, purple. *Pollen* yellow, globular, with three points or angles. *Pistil: Germen* superior obconical, hairy, and terminated by a long simple pappus; *Style* geniculated filiform; *Stigma* spreading, toothed.

Of this genus, nine species are enumerated by Mr. Brown in his Prodromus; but no species appears hitherto to have been cultivated in our gardens, till Mr. Allan Cunningham, in 1823, sent seeds from New Holland to the Royal gardens at Kew, where they produced flowering plants, in the greenhouse, in the month of May, 1826. From a drawing in Mr. Aiton's possession, the annexed representation was made, aided by dried specimens for the dissections.

Judging from these dried specimens, C. *taxifolium* is liable to much variation, in the size and pubescence of the foliage. Sieber's plant has the leaves twice the size of that here given, and I have, on the other hand, specimens gathered by Mr. Fraser, whose leaves are so narrow, that the plants might almost be considered as intermediate between *taxifolium* and *ericifolium*.

Fig. 1. Flower and Bracteæ. 2. Upper part of a Perianth laid open. 3. Front view of a Stamen. 4. Back view of ditto. 5. Pollen. 6. Germen, with its pappus, style, and stigma.—*Magnified.*

N. 2725

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—W.J.H. del.— —Swan Sc.—

GESNERIA AGGREGATA. CLUSTER-FLOWERED GESNERIA.

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Class and Order.

DIDYNAMIA ANGIOSPERMIA.

(Nat. Ord.—GESNERIEÆ. RICH.)

Generic Character.

Cal. 5-partitus, (plerumque germini adnatus.) *Cor.* tubuloso-campanulata, limbo bilabiato; labio superiore bi-inferiore trifido. *Stigma* bilobum. *Capsula* bilocularis, 2-valvis, placentis parietalibus.

Specific Character and Synonyms.

GESNERIA *aggregata;* pubescenti-villosa, foliis ovato-oblongis crenatis rugosis petiolatis, pedunculis 2—4 axillaribus unifloris aggregatis, corollis clavato-cylindricis basi superne bigibboso.
GESNERIA aggregata. *Bot. Reg. t.* 329.
GESNERIA pendulina. *Bot. Reg. t.* 1032.

DESCR. *Stem* herbaceous, from one and a half to two feet high, branched, with opposite branches, and hairy. *Leaves* opposite, from two to four inches long, ovato-oblong, rather obtuse, wrinkled with the numerous anastomosing veins, downy, especially beneath, where it is pale and almost woolly, the *nerves* prominent, the margins crenulated: *petiole* semiterete, from half an inch to an inch long. *Peduncles* from two to four, springing from the axils of the leaves, and shorter than they, slender, hairy, single-flowered. *Calyx* of five, deep, ovate, acuminate, hairy segments. *Corolla* beautiful scarlet, an inch and a half long, tubular, but swelling upwards, pubescent; the *mouth* nearly regular, with two spreading lobes forming the upper, and three, the lower lip. *Stamens* four, inserted at the base of the corolla, white. *Filaments* shorter than the corolla, curved. *Anthers* all united by their edges so as to form one mass. *Pistil: Germen* almost wholly superior, ovate, pubescent, with four yellow glands at the base, of which the upper one is much the largest; *Style* filiform; *Stigma* obtuse.

This was raised in the Glasgow Botanic Garden from seeds which Mrs. GRAHAM collected in Brazil, in the neighbourhood of Rio. It is well figured in the Botanical Register*, where it is justly given as a previously undescribed species. It seems, however, to be very nearly allied to GESNERIA *hirsuta* and *hondensis* of HUMBOLDT and KUNTH.

In this genus (as in GLOXINIA, which in many respects bears a great similarity to it) there are some species, among which is the present, that have the germen almost entirely free from any adherence with the calyx.

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* Since the above description was written, we find in the number of the Botanical Register for January, the same plant, as it appears, figured under the name of G. *pendulina.*

Fig. 1. Anthers. 2. Pistil.—*Magnified.*

N. 2726

W J H del^t.

[illegible]

HABENARIA LEPTOCERAS. SLENDER-SPURRED HABENARIA.

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Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ.)

Generic Character.

Cor. ringens. *Labellum* basi subtus calcaratum. *Glandulæ pollinis* nudæ distinctæ (loculis pedicellorum adnatis vel solutis distinctis.) BR.

Specific Character.

HABENARIA *leptoceras;* labello tripartito laciniis linearibus lateralibus minutis, cornu filiformi compresso germine duplo longiore, petalis *ext.*: valde concavis, *int.* semisagittatis, anthera basi bicalcarata, calcaribus subtus bituberculatis.

DESCR. *Root? Stem* a foot or a foot and a half high, rather stout, angular, leafy. *Leaves* erect, lanceolate, much carinated, striated, gradually passing upwards into bracteæ, which are as long as the germen, ovato-lanceolate, concave. *Spike* from six to eight inches long, of many rather remote greenish flowers. Outer petals or segments of the perianth ovate, green, remarkably convex, the lateral ones obliquely twisted, spreading: the two inner ones semisagittate, plain yellowish, applied to the inner margin of the galea. *Lip* yellow-green, of three linear segments, the middle and large one is linear, shorter than the germen, curved back, the lateral ones small, dentiform. *Spur* twice as long as the germen, white, filiform, slender, compressed at the extremity. *Anther* ovate, yellow, lengthened out at the base into two horizontal protruded, straight *horns* or *spurs*, which include, in a groove or furrow, the *pedicels* of the *pollen masses*, and are terminated by the brown gland. At their base beneath are two sessile yellowish glands. *Pollen mass* oblong, granulated: *pedicel* very long. *Germen* cylindrical, striated, and twisted.

This singular species of HABENARIA came up in a pot of mould which we received, at the Glasgow garden, from the Horticultural Society, and which was marked as containing NEOTTIA *orchioides*. It belongs to the true HABENARIA of WILLDENOW, of which that author described but two species, characterized by having two long spur-like processes from the base of the anther, which contain the lengthened pedicels of the pollen masses. From both those species it is abundantly distinct. The bud has a curious appearance, being much compressed laterally, and notched on one side: the cornu too is developed considerably before the expansion of the perianth.

Flowered, in the stove, in the month of October, 1826.

Fig. 1. Side view of a Flower. 2. Front view of the Helmet, Anther, and Lip. 3. Lateral Petal. 4. Anther. 5. Pollen mass.—*Magnified*.

2727
A

W.J.H. Pub. by S. Curtis. Walworth April 1. 1827. Swan sc.

2728
B

W.J.H. del.

Pub. by S. Curtis Walworth April. 1. 1827.

CARYOCAR NUCIFERUM. SOUARI, OR BUTTER NUT.

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Class and Order.

MONADELPHIA TETRAGYNIA.

(Nat. Ord.—RHIZOBOLEÆ. *De Cand.*)

Generic Character.

Calyx 5-partitus, demum laciniis deciduis. *Stamina* numerosissima, basi monadelpha. *Pet.* 5, crassiuscula. *Drupa,* nucleis 4, aut abortu 1—3, reticulatis.

Specific Character and Synonyms.

CARYOCAR *nuciferum;* foliis ternatis, foliolis elliptico-lanceolatis obscure serratis glabris calyce corollaque purpureis, antheris oblongis, drupa maxima.

CARYOCAR nuciferum. *Linn. Mant. p.* 247. *Willd. Sp. Pl. v.* 2. *p.* 1143. *Pers. Syn. Pl. v.* 2. *p.* 84. *Spreng. Syst. Veget. v.* 2. *p.* 627. *De Cand. Prod. v.* 1. *p.* 599.

RHIZOBOLUS Pekea. *Gærtn. p.* 93. *t.* 98. *f.* 1.

RHIZOBOLUS tuberculosus. *Smith in Rees Cycl.*

PEKEA tuberculosa. *Aubl. Guian. p.* 597. *t.* 239. fructus? non folia.

AMYGDALA guaynensis. *Clusius's Exot. p.* 27. *f.* 1. (nux.) *Pluken. Phyt. t.* 323. (nux.)

DESCR. *Arborescent:* the *tree* attaining a very considerable size: its *branches,* at least the smaller ones, opposite, their bark smooth, dark grey, inclining to purple, the young shoots purple-green. *Leaves* also opposite, enclosed, when quite young, within two lanceolate, concave, deciduous *stipules,* petiolate, ternate, the *leaflets* broadly lanceolate

ceolate or elliptical, attenuated at the base, acuminated at the extremity, from four to six or eight inches long, quite glabrous on both sides, having a mid-rib and parallel obliquely transverse veins, the margins obscurely serrated.

The *inflorescence* is produced in a terminal *corymb* of from two to eight *flowers*. The pedicels long, thick, purplish, glabrous, gradually enlarging upwards. *Calyx* two inches broad, cut to the very base into five broadly-ovate or rounded, obtuse, spreading lobes, of a purplish-brown colour and thick texture, with a scar or transverse mark near the extremity on the outside, concave, within pale purple towards the apex. *Corolla* of five very large elliptical concave *petals*, imbricating in the bud, of a deep purplish-brown colour, paler and redder where they have been protected by the outer ones; the inside is pale yellowish, streaked with purplish red. *Stamens* exceedingly numerous, hypogynous, united into one body at the base, the union reaches higher up from the base in the inside, than on the outside of this tube, thence separating into an infinite number of separate bundles of *filaments*, which are themselves united for about half their length, and which then divide into from sixteen to twenty slender, unequal, yellowish, distinct filaments, each terminated by an oblong, curved, two-celled, longitudinally-opening *Anther*. *Pollen* exactly spherical. The number of these stamens Mr. Guilding has determined to exceed four thousand nine hundred. *Pistil: Germen* broadly ovate, red, four-celled, terminated by four filiform *Styles*, about as long as the stamens, yellowish-green at the base, the rest reddish: the *Stigmas* simple, acute. *Fruit* an almost spherical, four-celled, four-seeded *drupe;* measuring five or six inches in diameter; but having, generally, one or more of the cells abortive,—the form of the entire fruit is altered in consequence; and the extremity or scar of the styles is generally excentric. The exterior surface is, when ripe, of a reddish-brown colour, finely mottled with darker markings, like a russet apple; the flesh is thick and yellowish. Each cell has a lining of a white astringent pulp, in which the large *Nuts* lie embedded; affixed, as it appears, to a central axis: these are of a rounded subreniform figure, and rich brown colour, compressed, and even flattened to an almost sharp edge on one side and truncated, where they are attached to the pericarp, and there likewise having a sulcus. The shell is closely embossed with tubercles, which are elongated towards the flattened edges, of a very hard texture (so as to require a heavy blow with a hammer to break it) and thick substance; this substance is filled with numerous linear transverse cavities. Each *Nut* has a single cell, in which is a glossy and shining, rich brown, solitary *seed*, attached to the truncated portion of the margin, nearly reniform, or of the same shape as the nut, covered with a rather thick, smoothish, red-brown membrane or integument, within which lies the *almond*, destitute of albumen. This is reniform, or subcylindrical, curved so as to be kidney-shaped, and is believed to constitute the *radicle*, subacute at one end, at the other having a curved attenuated process, terminated by two small ovate *cotyledons*. The whole of this mass is greyish brown externally, within almost of a pure ivory white, the substance soft and fleshy, somewhat oily (whence the fruit is known by the name of *Butter Nut*), and of a very agreeable flavour.

If we sometimes depart from the rule, to which the former editors of the Botanical Magazine appear rigidly to have adhered, that no plant should be admitted into its pages, except it has been cultivated and brought to blossom in our gardens; it will only be in the rare instances, where, if the plant has been introduced, we have little hope of seeing it produce flowers in this country; or where the individual is not yet known to our collections, but is most worthy of being cultivated, either from its beauty, or from some useful property residing in it: in both these cases, none will be given but such delineations and descriptions as are taken from living plants, on the fidelity of which we can, with certainty, rely.

Already we have at our command an inestimable set of drawings of West Indian Plants, principally of such as are useful, from yielding articles of food or medicine, or which afford materials connected with commerce; these are executed by the Rev. LANSDOWN GUILDING of the island of St. Vincent, with the greatest attention to accuracy: and we have another collection, from General HARDWICKE, of designs, made under his directions, in the East Indies.

The subjects of the annexed plates are taken from the drawings of our excellent friend, Mr. GUILDING, which were accompanied by specimens, both dried and in spirits, and by ample notes. These, we trust, have enabled us to compile a very satisfactory account of a plant, of which, though the nuts have long been known, no representation whatever has been given of the flowers.

In the fruit shops we are all familiar with a nut, known by the name of Souari, or *Suwarrow* (Aublet spells the word *Saouari*), or Butter Nut. To the tree which produces them, Linnæus, in his Mantissa, seems to have given the appellation of Caryocar *nuciferum*, which has been adopted by Willdenow and De Candolle, by Persoon and Sprengel. Willdenow describes the species as having ternate leaves, and farther says, " *Calyx corollaque purpurea, Drupa magnitudine capitis, Nuclei amygdali sapori?"* Aublet, under the name of Pekea *butyrosa*, Plantes de la Guiane, t. 238, has figured a plant evidently belonging to the genus Caryocar, only that the fruit is monospermous: the leaves are quinate. At p. 597 and t. 239 is represented his Pekea *tuberculosa*, where again the foliage is quinate, but downy beneath, and the nut is figured and described (for neither the flower nor the pericarp of the fruit were known to Aublet) as so extremely similar to that of our present plant, that we can hardly persuade ourselves they are not the same. The almond is said to be white and good to eat; its name among the natives is Tata Youba; and the Sauoari of the Caribbees is declared by Aublet, to be represented in his t. 240, which, though it has ternate, glabrous leaves, like those of the Caryocar *nuciferum*, bears a fruit of a totally different kind.

Willdenow describes three species of Caryocar; the first is the C. *nuciferum* (Linn. Mant. being the only synonym); the second, C. *butyrosum* (Pekea *butyrosa*. Aubl.); and the third, C. *tomentosum* (P. *tuberculosa*. Aubl.); and he mentions the Saouari of Aublet as probably belonging to this genus.

Sir J. E. Smith describes two species of the genus, the Caryocar *butyrosum* (Pekea. Aubl.) and the C. *tuberculosum*, and refers them both to the Rhizobolus of Gærtn. To this latter, Sir J. E. Smith refers C. *tomentosum* of Willdenow, together with the C. *nuciferum* of Linnæus, and the P. *tuberculosa* of Aublet.

De Candolle, like Willdenow, has kept the C. *nuciferum* of Linnæus distinct from the rest, and characterized it " foliis trifoliolatis, calyce corollaque purpureis, antheris oblongis, drupis capitis humani magnitudine: with which arrangement we perfectly accord. Our plant has ternate leaves, glabrous on both sides, and is the tree that produces the nut, so commonly sold under the name of the

Suwarrow, or *Butter Nut*. Of this it has fallen to the lot of Mr. GUILDING to illustrate not only the flower, but the fruit, in a way, which, we trust, will prevent all further confusion.

The tree is a native of the continent of South America, in the districts of Essequibo and Berbice, and the leaves, as well as nuts, have more than once been communicated to us from those countries, by C. S. PARKER, Esq.*. It was, however, from a tree, imported into the island of St. Vincent's, that the drawings here given and many others, which the limited nature of our work will not allow us to introduce, were made. We have confined ourselves to the more essential figures, selected from a series of four folio drawings. The flowers, Mr. GUILDING observes, may, occasionally, expand more than they are here represented; but the tree being at a great distance from our friend's residence, he had not the opportunity of frequent access to it.

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* Mr. PARKER writes us word "of the *Souari* (or, by corruption, Suwarra Nut), I have only seen one kind, and that not often, in our ill-supplied market at George Town, Demerara. It is the kind I sent you, which I always took for the C. *nuciferum*. In its native woods I never gathered the *Souari Nut* but once, during a hasty excursion to the summit of the "Blue Mountains," on the left bank of the Essequibo river. When we had attained the summit of the ridge, perhaps six or eight hundred feet above the level of the sea (the highest ground I ever stood upon in the colony), I found first a Nut, and then a decayed Drupe upon the ground. The trees were very lofty which produced them, and, I think, I may safely say, that their stems grew perfectly straight, without a branch for seventy or eighty feet, like vast columns."

TAB. 2727. Fig. 1. A small terminal flower-bearing Branch; having few blossoms (compared with others), and from which most of the leaves are removed. At the letter *a*, is a scar whence a leaf has fallen. A peduncle is seen, from which the corolla and stamens have dropped; and, at 2. is the Flower, perhaps not quite so much expanded as when in a growing state. 3. Calyx, with a Germen cut through transversely, to show the Ovules. —*All of these are the natural size.* 4. Portion of the Stamens, shewing their union at the base, and their mode of splitting into distinct bundles. 5. Front view of an Anther. 6. Back view of the same, to show the insertion of the Filaments. 7. Pollen.—*All magnified.*

TAB. 2728. Fig. 1. Fruit containing three Seeds, reduced to about one-third of its natural size. 2. Section of the same, shewing the situation of the Seeds, and their intermediate pulpy envelope, *similarly diminished.* 3. Nut.—*Natural size.* 4. The same cut open to show the Seed. 5. The Embryo. 6. Seed laid open, to show the internal appearance of the Embryo. —*All these of the natural size.*

2729

Pub. by S. Curtis. Walworth April 1. 1827.

MAXILLARIA PARKERI. MR. PARKER'S MAXILLARIA.

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Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ.)

Generic Character.

Perianthium patens, resupinatum. *Labellum* cum processu unguiformi columnæ articulatum, trilobum. *Foliola* lateralia *exteriora* basibus cum processu columnæ connata. *Pollinia* 4, basibus connata, glandulosa (vel 2. pedicellata, pedicello basi glanduloso). Herbæ *parasiticæ, bulbosæ,* Americæ meridionalis. Racemi (*vel* scapi uniflori), *radicales*. LINDL.

Specific Character.

MAXILLARIA *Parkeri;* bulbo elliptico compresso rugoso monophyllo, folio lanceolato-lingulato coriaceo obscure striato, basi in petiolo compresso attenuato, scapo unifloro bracteis imbricato, petalis interioribus lineari-lanceolatis, labello oblongo trilobo, lobis lateralibus incurvis, terminali patente undulato, intra lobos laterales linea media longitudinali clavata.

DESCR. Parasitic: *Bulb* about the size of a pigeon's egg, elliptical, compressed, somewhat wrinkled, and partially clothed with dry husky sheaths, terminated by a solitary leaf, often a foot long, and two, or two and a half inches broad, of a coriaceous texture, with a central slender rib, and obscurely marked with longitudinal lines, dark green, lanceolate, or between lanceolate and strap-shaped, rather acute, attenuated at the base into a compressed fleshy petiole, which is grooved on the anterior edge.

Scapes, one or two from the base of the bulb, bearing a moderately sized single *flower,* and clothed with large alternate, imbricating, equitant, compressed, broadly ovate, membranaceous *scales* or *bracteæ:* their colour is green, beautifully striated with purple at the base; the upper one the largest, having its apex lying over the base of the back of the flower. *Flower* erect, or a little inclined: three outer *petals* erecto-patent, oblong, the two lateral ones decurrent at the base, but scarcely forming a spur; yellow buff-colour, the two interior ones erect, linear-lanceolate, white, punctato-striated with purple on its lower half within, its lower inner margin adnate with the column. *Labellum* as long as the inner petals, erect, the sides involute, three-lobed, beautifully and longitudinally veined with purple, except on the terminal lobe, which is ovate, crisped at the margin and spreading. Between the lateral lobes is a longitudinal elevated yellow line. *Column* semicylindrical, curved a little forward, deep brownish purple, yellow at the base. *Stigma* quadrangular, placed in the front just at the apex. *Anther* operculiform, terminal, hemisphærical. *Pollen masses* four, two smaller and two larger, elliptical or ovate, compressed, yellow, united by a semilunar, large, whitish gland, having a purple margin.

This is a very pretty species of *Maxillaria*, and very distinct from any hitherto described. It was discovered by our friend CHARLES S. PARKER, Esq. in Demerara, and by him sent to the Liverpool Botanic Garden, where Mr. SHEPHERD informs us, it flowers readily (treated in the usual manner of the Parasitical Orchideæ), and continues a long time in blossom.

Fig. 1. A Blossom, of which the Petals or Segments of the Perianth are laid open to show the Column and Labellum. 2. Side view of the Labellum. 3. Summit of the Column from which the Anther-Case has been removed, showing the Stigma and Pollen-Masses. 4. An Anther, including its Pollen-Masses. 5. Front view of a Pollen-Mass. 6. Back view of ditto.—*All more or less magnified.*

2730

— W. J H. del — Pub. by. S Curtis, Walworth April 1. 1827. — Swan sc. —

NEOTTIA GRANDIFLORA. LARGE-FLOWERED NEOTTIA.

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Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ.)

Generic Character.

Cor. ringens: petalis exterioribus anticis labello imberbi suppositis; interioribus conniventibus. *Columna* aptera. *Pollen* farinaceum. BR.

Specific Character and Synonym.

NEOTTIA *grandiflora;* foliis ovato-lanceolatis sessilibus subcarnosis immaculatis, scapo bracteato, petalis anticis decurrentibus labello semiinfero ecalcarato suppositis.

SPIRANTHES grandiflora. *Lindl. in Bot. Reg. t.* 1043.

DESCR. Terrestrial, stemless. *Leaves* ovato-lanceolate, sessile, bright green, having a few large semipellucid spots, springing from the crown of the root. They are six to eight inches long, concavo-carinate, with a central rib, and several parallel obscure nerves; the margin waved: the substance is rather thick and fleshy, more succulent than in N. *picta*. *Scape* a foot or more high, having several *bracteæ,* ovate, or ovato-lanceolate, appressed, gradually becoming smaller, and passing into the linear-lanceolate bracteæ of this flower:—this *scape* is thick, succulent, pubescent, sulcated; at the extremity the *flowers* are arranged in a lax spike, occupying about one-third of the scape. The *flowers* are large, erect, the greater part of the perianth or petals declined almost at right angles; so that the whole, especially in bud, has a strong resemblance to the head and neck of a bird: their colour is pale uniform green, except the two inner petals and the labellum, which are paler and yellower: the whole flower too, is, externally, clothed with dense succulent white hairs, except the *inner petals* and the *labellum:* this pubescence is, however, far more conspicuous on the *germen* than on the *petals,* and the apices of all the *petals* are almost entirely glabrous. Upper *petal* shorter than the two lower ones, thick, fleshy, darkish green, united and incorporated with the two inner ones, of which latter, the margins alone are visible: they are thin and membranous, and the three, collectively, form a helmet over the essential parts of fructification;—the two lower *petals* (which in most orchideous plants occupy the side of the flower, but here the under side) are long, linear, lanceolate, remarkably decurrent at the base, at least twice the length of the upper petals, uniting, and then, still lower down, forming an adnate spur, best seen by a transverse section, fig. 9; where the lower part of the figure represents the space formed between the petals and the germen, containing only the base of the labellum. The *labellum* is long, the margins involute about the column, spathulate, the extremity spreading (but not reflexed), waved at the margin, longitudinally striated, the base slightly gibbous. *Column* erect, long, almost cylindrical, having the stigma at the base full of honey-like juice, spreading at the upper part into an ovate acuminate horizontal extremity, flat at the top, and having affixed to its base, on the upper surface, the lanceolate two-celled *anther*. The *pollen masses,* two in number, white, farinaceous, clavate, having a longitudinal rima, and fixed, by their base, to a rather large leaden-coloured *gland,* are deposited by the *anther*-case on the top of the *column* (as at fig. 7.). *Germen* twisted at the base.

The present plant is a native of Brazil, and we were favoured with the specimen by the Messrs. SHEPHERD, of the Liverpool Botanic Garden*. It bears much affinity to the NEOTTIA *picta*; but that has uniformly thickly spotted, more petiolated, less succulent leaves, petals far more spreading and much whiter, and a lip which is always revolute. The two are cultivated in the same stove by the Messrs. SHEPHERD, and are always found to maintain their respective characters.

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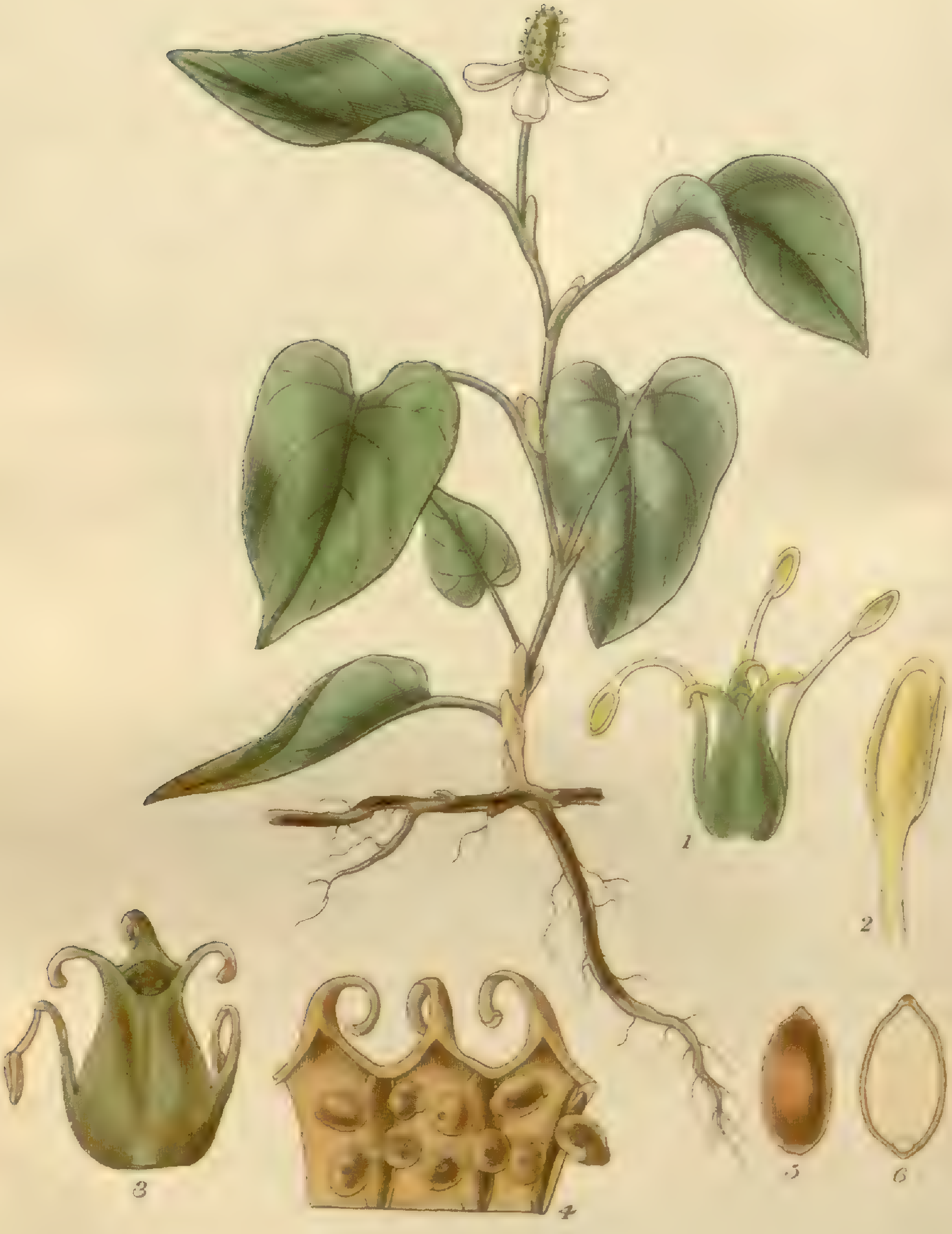
* We had called this plant NEOTTIA *viridis*, to distinguish it from the N. *picta;* but since our engraving and description were completed, we find the same species to be figured in the last Number of the Botanical Register (for February, 1827), under the name which we have now adopted; and it is stated to be introduced to the Horticultural Society, in 1824, from Rio Janeiro, by Mr. DAVID DOUGLAS.

Fig. 1. Side view of the upper part of a Flower. 2. Front view of a Flower. 3. Back view of ditto. 4. Flower deprived of its Petals. 5. Column. 6. Back view of the top of the Column, the Anther Case covering the Pollen Masses. 7. Top of the Column, the Anther Case being removed. 8. Pollen Masses.—*All more or less magnified.*



W. J. H. del.

Pub. by S. Curtis Walworth. April 1 1827

Swan sc.

HOUTTUYNIA CORDATA. CORDATE HOUTTUYNIA.

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Class and Order.

TRIANDRIA TRIGYNIA.

(Nat. Ord.—AROIDEÆ ?)

Generic Character.

Spatha tetraphylla. *Spadix* oblongus staminibus nudis epigynis tectus. *Capsula* unilocularis, polysperma. *Receptacula 3,* parietalia.

Specific Name and Synonyms.

HOUTTUYNIA *cordata.*
HOUTTUYNIA cordata. *Thunb. Jap. p. 234. t. 26. Willd. Sp. Pl. v. 2. p. 290. Wall. in Fl. Ind. v. 1. p. 360.*
POLYPARA conchinchinensis. *Lom. Coch. v. 1. p. 78.*

DESCR. *Root* perennial, somewhat thick and creeping, throwing out a few fibres. *Stem* from three or four inches to two or three feet high, according to Dr. WALLICH, erect, mostly simple, zigzag, glabrous, in our specimens, bearing remote alternate leaves. *Leaves* cordato-acuminate, entire, glabrous, nerved, more or less deeply notched at the base: *Petiole* more than half as long as the leaf, furnished at the base with a membranaceous, brown, somewhat ciliated *stipule.*

Peduncle terminal, solitary, single-flowered. *Spatha* resembling a corolla, of four ovate, spreading, white elliptical leaflets, inserted immediately below the oblong spadix, which consists of several naked closely-placed flowers. *Germen* somewhat ovato-triangular, terminating in three recurved styles, with an opening (as in RESEDA) between the base of the styles. *Stamens: Filaments* white, inserted upon the angles, near the middle, of the germen. *Anthers* oblong, yellow, opening with two lateral cells. The *capsule* is scarcely altered in form from what it was in the state of the germen, except that the aperture between the styles is more enlarged: the *styles* and withered *stamens* remain. Within the one-celled *capsule* are three longitudinal parietal *receptacles*, bearing each a few elliptical brown *seeds*, acuminulated at both extremities, filled internally with an albumen, which is between waxy and corneous, except at one end, where the minute *embryo* is imbedded.

Although the drawing in the possession of W. TOWNSEND AITON, Esq., from which the annexed figure was principally copied, represents but a small state of the plant; yet we are glad to have an opportunity of giving any representation of so great a rarity, of which no good plate has yet been given, and which has been by no one well described, but by Dr. WALLICH, in the Flora Indica, above quoted. That description, indeed, is most accurate in every respect.

THUNBERG first detected the plant in Japan, where it is known by the name of *Doku Dami*, or *Sjunjak*, growing abundantly in ditches by way sides; and it has since been found in very great plenty also in Nepal, by the Honorable MR. GARDNER, DR. GOWAN, and DR. WALLICH. We have many dried specimens from the latter botanist, from which our dissections have been made; and, from seeds sent by the same individual, and from the same country, Nepal, plants have been raised by Mr. AITON at Kew, which blossomed in the month of September, 1826.

In Cochinchina, LOUREIRO found it only in gardens.

Fig. 1. Single Flower. 2. Anther. 3. Capsule. 4. Capsule open to show the insertion of the Seeds. 5. Seed. 6. Section of ditto.—*Magnified.*

— W. J.H. del. — Pub. by S. Curtis. Walworth. April 1. 1827. — Swan Sc —

SCÆVOLA KŒNIGII. SHRUBBY EAST INDIAN SCÆVOLA.

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Class and Order.

PENTANDRIA MONOGYNIA.

(Nat. Ord.—GOODENOVIÆ.)

Generic Character.

Corolla hinc longitudinaliter fissa, genitalia exserens; *limbo* inde secundo, 5-partito, laciniis alatis conformibus. *Antheræ* liberæ. *Stigmatis* indusium ciliatum. BR.

Specific Character and Synonyms.

SCÆVOLA *Kœnigii;* cymis glabris, floribus dichotomiarium pedicellatis, calyce 5-partito ovarium æquante, foliis obovatis apice subrepandis utrinque ramisque glaberrimis. *Br.*

SCÆVOLA Kœnigii. *Vahl. Symb. v.* 3. *p.* 36. *Willd. Sp. Pl. v.* 1. *p.* 956. *Brown Prodr. Fl. Nov. Holl. v.* 1. *p.* 580.

" SCÆVOLA Lobelia. *Herb. Linn.* (auctoritate *Herb. Banks.*)"

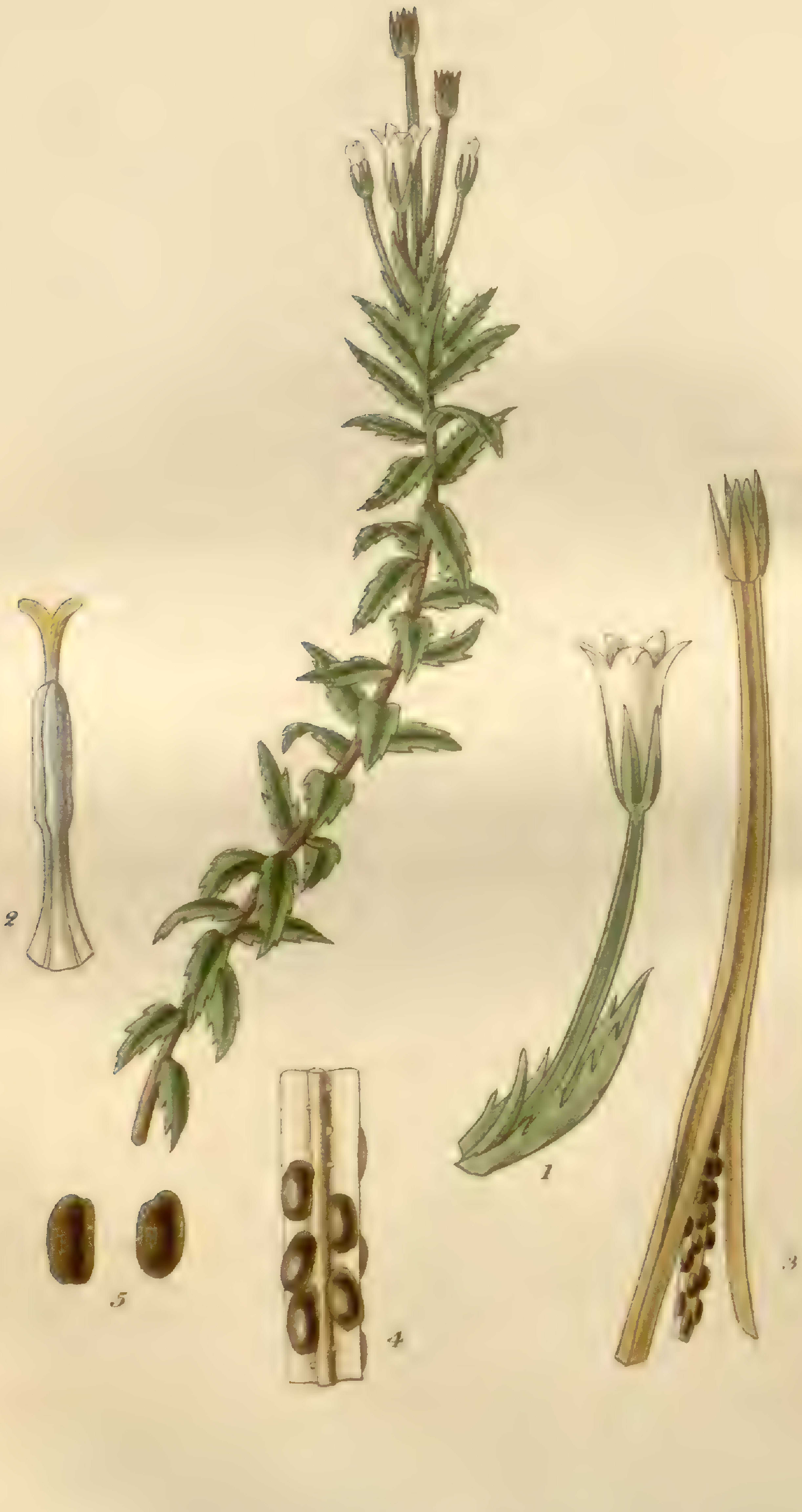
DESCR. Apparently a small succulent shrubby plant, with thick, rounded, unbranched? *stems,* erect. *Leaves* alternate, four to five inches long, obovate, and tapering at the base into a very short footstalk, and at the point of insertion furnished with a tuft of white silky hairs: the surface is scarcely nerved, the margin repando-crenate towards the extremity; the substance thick and fleshy.

Cyme of about three lateral flowers, opposite, subtended by opposite bracteæ, which have a tuft of white hairs in the inside, central flower pedicellate. *Calyx* superior, five-partite, the laciniæ lanceolate. *Corolla* with a tube slit open on the upper side, and yellow, hairy within; *limb* unilateral, of five spreading, winged, waved, and ciliated, white, obovate *segments:* each has a central line; pubescent at their base, and this down, or these hairs, when closely examined, are found to originate on small scales, fig. 2. *Stamens* five; free, scarcely so long as the tube. *Anthers* oblong, two-celled. *Germen* inferior, obovate, furrowed. *Style* thick, longer than the *stamens,* green, hairy at the base. *Stigma* obtuse, surrounded by a cup-shaped, strongly ciliated *indusium.* *Berry* ovate, about as large as a pea, two-seeded.

For the opportunity of figuring this exceedingly rare plant, I am likewise indebted to the friendship of Mr. AITON. His drawing was made at the Royal Gardens at Kew, in August, 1826, from specimens raised from seed, sent in 1824, by Mr. ALLAN CUNNINGHAM, from New Holland. It is a native of the sea shore in the tropical parts of that country, according to Mr. BROWN; and it was on the north coast that Mr. CUNNINGHAM likewise detected it. I possess specimens from the Mauritius, which were gathered by Mr. BOJER, and which differ from the figure here given only in having the *Cymes* compound, probably the effect of luxuriance.

SCÆVOLA *sericea* and Sc. *Plumieri* of LINNÆUS have the same aspect as the present plant. The former has downy leaves, and the latter (a native of the West Indies, and also of the Cape), has the central floret always sessile.

Fig. 1. Flower. 2. Scale from the base of one of the Segments of the Flower. 3. Flower deprived of the Corolla.—*Magnified.*



—W.J.H. del.—

Pub. by S. Curtis, Walworth April 1. 1827.

CAMPANULATA PRISMATOCARPUS. ANGULAR-FRUITED CAPE CAMPANULA.

* *

Class and Order.

PENTANDRIA MONOGYNIA.

(Nat. Ord.—CAMPANULACEÆ.)

Generic Character.

Calyx tri- rarius 4-fidus. *Corolla* campanulata, 5-fida. *Filamenta* basi dilatata. *Stigma* 3, 2-lobum. *Capsula* 3, 2-locularis, sæpius infera, foraminibus lateralibus aperiens, nunc apice supero valvato. BR.

Specific Character and Synonyms.

CAMPANULA *Prismatocarpus ;* capsulis linearibus bilocularibus, foliis lanceolatis laxe serratis glaberrimis caule decumbente.

CAMPANULA Prismatocarpus. *Ait. Hort. Kew. ed.* 1. *v.* 1. *p.* 224. *ed.* 2. *v.* 1. *p.* 352. *Willd. Sp. Pl. v.* 1. *p.* 913. *Spreng. Syst. Veg. p.* 737.

" PRISMATOCARPUS nitidus. *L'Herit. Sert. Angl.* 2. *t.* 3."

DESCR. *Shrubby,* whole plant glabrous. *Stems* procumbent at the base, thence erect, reddish-brown, shining, scarcely branched. *Leaves* rather remote, patent, sessile, lanceolate, rigid, scarcely more than half an inch long, stiff and rigid, furnished with a mid-rib, the margins slightly revolute, spinuloso-dentate, the teeth distant, pointing upwards, the apex acute. *Bracteæ* large, concave, spinuloso-serrate, with a lesser one linear and entire, on the inside of the base of the *germen.*

Flowers three or four together, from the extremity of the stem ; each subtended by its *bracteæ,* sessile. *Calyx* superior, five-partite, the *leaflets* linear-lanceolate, erect.

Corolla almost infundibuliform, white, quinquefid at the extremity. *Stamens* united by the anthers. *Pistil*: *Germen* very long, linear, tetraangular: *Style* filiform. *Stigma* bifid. *Capsule* acutely quadrangular, two-celled, four-valved, the valves opening longitudinally. *Dissepiment* linear, membranaceous, at length free, thin, membranaceous, with a central thickened rib, to which the seeds are attached on both sides. *Seeds* in two ranks, elliptical, plane, dotted.

Introduced to the Royal Gardens, according to the Hortus Kewensis, by Mr. Masson, from the Cape of Good Hope, in 1787. It appears then to have been lost to our collections for a number of years, until seeds were again sent to the Royal Gardens at Kew, from the Cape, by Mr. Bowie, in 1823.

Poriet describes the corolla as rotate; which, it assuredly, is not, either in the Kew plant, or in dried specimens we have in the Herbarium;—on the contrary, it is an unusually long and narrow tube for the genus. The capsule is as long as narrow, and as regularly tetragonal as that of an *Epilobium;* it splits from top to bottom into four valves, and contains a dissepiment bearing two rows of seeds on each side.

Fig. 1. Flower and Bracteæ. 2. Stamens and Style. 3. Capsule: one of the Valves separated from the bottom to shew the Dissepiment bearing the Seeds. 4. Portion of the Dissepiment. 5. Seeds.—*Magnified.*

2734
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Pub. by. S. Curtis, Walworth, May. 1. 1827.

— Swan.

(2734, 2735, 2736, 2737, 2738)

LODOICEA SECHELLARUM. DOUBLE, OR SEYCHELLES-ISLAND, COCOA-NUT.

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Class and Order.

DIŒCIA MONADELPHIA.

(Nat. Ord.—PALMÆ.)

Generic Character.

MASC. *Spadix* basi spathaceus, amentaceus. *Amentum* cylindraceo-elongatum, squamatum intra substantiam floriferum. *Flores* in massam subreniformem arctissime distiche imbricati, numerosi. *Calyx* triphyllus. *Corolla* tripetala. *Stamina* numerosa, basi monadelpha.

FÆM. *Spadix* basi spathaceus, vaginato-squamosus; squamis erosis, flores remotiusculos gerens. *Calyx* triphyllus. *Corolla* triphylla. *Germen* late ovatum, inferne triloculare. *Stigma* sessile, minutum, trifidum. *Drupa* fibrosa, *nuce* bi- triloba, di- trisperma?

Specific Character and Synonyms.

LODOICEA *Sechellarum.*

L. Sechellarum. *Labill. in Ann. du Mus. v. 9. p. 140. t. 13. Spreng. Syst. Veg. v. 2. p. 622.*

L. maldivica. *Pers. Syn. Pl. v. 2. p. 630.*

Cocos maldivica. *Gmel. Syst. Nat. v. 2. p. 569. Willd. Sp. Pl. v. 4. p. 402.*

PALMIER de l'Isle Praslin, vulgairement appellé COCOTIER de Mer. *Sonnerat Voy. de la Nouvelle Guinée, p. 4. t. 3, 4, 5, 6, 7.*

Cocus maldivicus. *Rumph. Hist. Amb. v. 6. p. 240. t. 81. (Nux.)*

DESCR. The *Trunk* of this beautiful PALM rises commonly to an elevation of fifty or sixty feet, and, sometimes, attains to eighty or one hundred feet, straight, apparently destitute of bark, annulated with the scars of the old leaves,

about a foot in diameter, with scarcely any difference in size to the very top, where it is crowned with a tuft of from twelve to twenty *leaves;* these are very large; the youngest rising from the centre, at first folded close, like a shut fan, and then clothed with a downy substance; at length they expand into a broadly-ovate form, having a central rib, and beautiful regular plicæ or folds diverging from it; the margins more or less deeply cut, especially at the extremity. Some of these leaves have been measured, and found to be twenty feet long and ten or twelve feet wide, supported upon a petiole as long as the leaf itself: their more common size, however, is from eight to ten feet long, and five or six wide, which is about the dimension of the foliage produced by the oldest trees. The colour is a bright yellow green; the texture thin and dry, and when viewed under the microscope, is seen to be composed of a beautiful tissue of fine network, having quadrangular areolæ or meshes. The old leaves, when withered, hang down upon the stem, previously to falling off.

The *male* and *female flowers* are produced upon different trees *(t. 2734.);* each constituting a *Spadix*, which has small sheathing *Spathas* at the base.

Spadix of the *Male Plant* from the axils of the leaves, amentaceous (not unaptly compared to the closely imbricated Catkin of a willow), from two to four feet long *(t. 2735)*, and from three to four inches in diameter in the thickest part, cylindrical, tapering however towards the extremity, closely covered on all sides with densely imbricated, semicircular, slightly convex *scales*, which so completely form a continuation of the substance of the spadix, as not to be separated but by force. When looking externally at these scales, a small aperture will be perceived, from which the *stamens* issue; and this aperture, though near the base, is not in the centre of each scale, but constantly on one and the same side; and as the scale laps over with *that* side the one next above it, so the aperture and the *stamens* will be found to pass through both *(t. 2735. f. 2.)*. The origin of the *stamens*, indeed, is not, as in our amentaceous plants, immediately beneath the scales. We must make a transverse section through the whole tough (between fleshy and fibrous) substance of the spadix, and we shall find it to be every where filled with elliptical cavities, radiating from near the centre to the circumference, and on the circumference terminating at the apertures above mentioned. *(See t. 2735, f. 3,* in which figure, it will be observed that, where

2755.
B.

[illegible] [illegible]

where the cavities are the largest, the section has passed through the very middle of them, where smaller, either a very small or a very large portion has been cut away; for, opposite to the apertures, the cavity is of the same size, or nearly so throughout.) Each cavity we find to be filled with a great number of *flowers*, about an inch long, but collected and united into a very closely imbricated, distichous, kidney-shaped mass *(t. 2735. f. 4.)*, attached by its base, *(a)* to the innermost side of the cavity next the axis of the spadix. Only one flower opens at a time, beginning with the lowermost, which is the longest and next the aperture; when that has discharged its office, the one above it becomes more elongated, expands, is protruded till the *pollen* is dispersed; and so on, till the whole, perhaps fifty or sixty, have withered; in which state they still remain within the cavity, a mere mass of husky scales, if possible more closely compacted than before. Each *flower* is composed of six pieces, of which the three *outer* have been generally considered a *calyx*, and the three *inner*, a *corolla (t. 2735. f. 5, 6.)*: they are oblong, membranaceous, yellowish-brown; the outer ones rather larger and more angular than the inner. *Stamens* fifteen or twenty. *Filaments* united at the base into one body *(t. 2735. f. 7.)*: *Anthers* linear, two-celled, opening longitudinally, each cell terminating in two globular heads. The *Spadix* has a short compressed footstalk, with a groove on one side.

Spadix of the *Female Plant (t. 2736, f. 1.)* also springing from the axil of the leaves, pendent, two to four feet long, thick and woolly, tortuose, clothed with large sheathing, red-brown scales, which are singularly fimbriated, or more generally erose at the margin, and support several, more or less distantly placed, *female flowers* of different ages, at the same time, and of various sizes: for, along with the fully-formed ripe fruit is often seen the still unfertilized *germen*, in itself about the size of a hen's egg, but enveloped in the six leaves of the *perianth*, of so thick a nature, as to render the whole of the dimensions and form of a moderate sized apple *(t. 2736, f. 5.)*. The three outer and three inner leaves (or *Calyx* and *Corolla*) are almost hemisphærical and an inch thick at the base; the outer ones the largest, their margins crenated; but both remain and increase in size prodigiously with the fruit, so as then to be five or six inches in diameter. *Germen* almost concealed by the *Perianth*; broadly ovate, narrow at the base above the insertion of the *Perianth*; and in that lower part only, exhibiting an appearance of three *cells (t. 2737. f. 1.)*: the whole upper part, a little above the letter *a* of *f. 2, t. 2736,* is a pulpy mass, traversed by longitudinal vessels. In other germens there is no trace of cells. The *stigma* is sessile (unless the great mass above the insertion of the ovules may be considered as a *style*), having a minute, three-lobed aperture. As the *fruit* advances to maturity, one or two of the cells become abortive, and the germen, rounded before, then appears depressed on one side. (A vertical section of an unripe fruit is given at *f.* 2, and a transverse section, at *f.* 3 of *t.* 2737, in both of which there appears to be but a single *seed or nut.*)

Many, indeed, of the germens are wholly abortive. A single *spadix* ripens from five to six fruits, each as large as the largest melon, often a foot and a half in length, weighing twenty, or twenty-five pounds, oval, rounded, or compressed on one side, and more or less acuminated, the base surrounded by the greatly enlarged *Perianth (t. 2738, f. 1.)*. The external coat, or *Pericarp,* is formed by a thick envelope, or husk, which bears much resemblance to the coat of the common walnut, but is vastly thicker in proportion, having nearly the same form and colour, that is, a deep green. Before the fruit has attained its perfect maturity, the interior, near the base, is divided into two parts, and contains a substance like a white jelly *(t. 2737, f. 2, a),* firm, transparent and sweet to the taste. A single Cocoa-nut holds, perhaps, three pints of this substance; but if kept a few days, it turns sour, thick, and unpalatable, giving out a very disagreeable smell.

One, two, or three, rarely four *nuts* are found within each pericarp. These *nuts* are a foot long, broadly ovate, or elliptical, at the base very obtuse, at the upper extremity notched into two or three, rarely four deep lobes, hemisphærical on one side, compressed on the other, of a dark brown almost black colour, and a very hard woody texture, marked externally with shallow furrows *(t. 2738, f. 2, 3.)*. This nut is divided in the middle by a *dissepiment* (two or three, probably, in those which are two or three lobed) of considerable thickness, but leaving a communication in the centre from which the *germ* or infant plant eventually appears. The cavity is filled by the *almond,* which is very hard, white, and corneous, so that it may be rasped with a file, but is with difficulty cut with a knife.

Twelve months elapse, from the time of the appearance of the *germen,* before the fruits are fully ripe; and they

2736

– W. J. H. delt. –

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have been known to hang three years on the tree before falling on the ground. The outer envelope rots away in a few days. It is from the sinus of the lobes, where there are many, coarse, rigid fibres *(t. 2738. f. 3.)*, that the *Embryo* or *Germ* is protruded; and this takes place before the shell has decayed, but after the pericarp has fallen away. It extends itself to a considerable distance from its parent seed before it is separated, remaining attached to it by what appears a portion of the root or *radicle;* whilst the outer extremity penetrates into the earth, and from a cleft in the thickest part, near the middle, throws up the *plumule*, as appears at the letter *a* of the same plate and figure.

From the period of its falling from the tree, a year elapses before the nut begins to germinate; and it is twenty or thirty years before it bears fruit. The tree has generally from twenty to thirty ripe Cocoa nuts upon it at the same time.

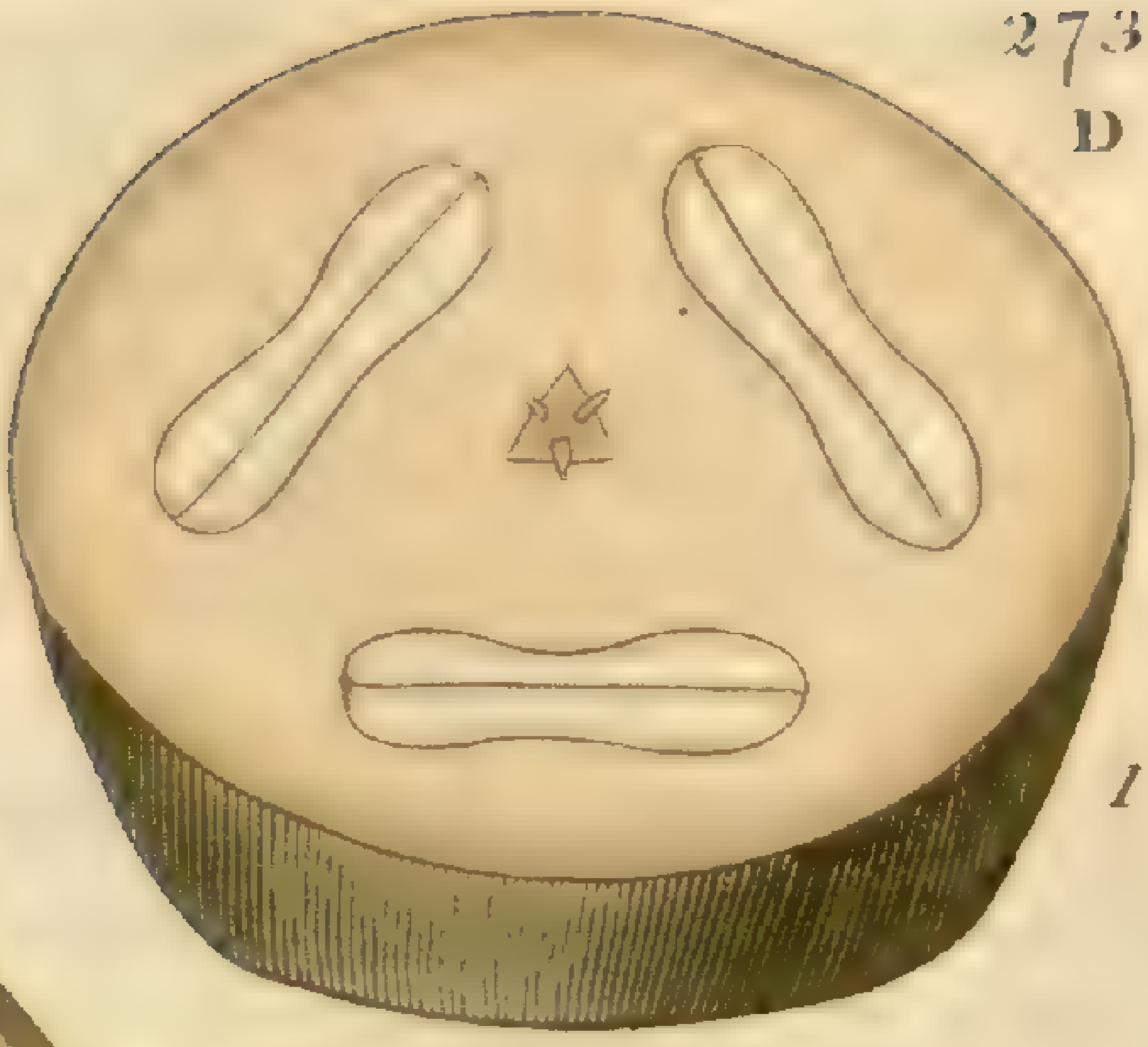
For a long series of years, such was the difficulty of obtaining specimens of Palms in a good state for examination, and so few Naturalists had the opportunity of examining those trees in a growing state, that they might well have been considered as the opprobrium of Botany. This was the more to be regretted, since, of all known plants, hardly any tribe has offered to man so many useful and valuable properties as the Palms; or has been stamped by Nature with such elegance and majesty of form; whence LINNÆUS has justly styled them the Princes of the vegetable kingdom. So imperfectly was their fructification known to the great Swedish Naturalist, that he could scarcely refer any of them to their proper places, even in the artificial arrangement, but grouped them in a distinct class, at the end of his system, called "*Palmæ.*" ROXBURGH and THUNBERG contributed materially to our knowledge of those which are natives of the East Indies; while in South America, POITEAU, during his residence in the French provinces of Guiana, and, since that period, SPIX and MARTIUS, during their travels in Brazil, have made the structure of many of the Palms comparatively familiar to us. The splendid work, exclusively on that subject, which has been published by the latter authors, will remain a monument of their knowledge and industry, as well as of the munificence of the Prince through whose means it was given to the scientific world. But of all the Palms, perhaps that which for a long time has been the least perfectly known, and yet the most extensively celebrated, is, the subject of the present description, the *Double Cocoa Nut*, the *Coco de Mer*, *Coco de Salomon*, and *Coco des Maldives* of the French, the *Cocos Maldivicus* of Rumphius, and *Nux Medica* of Clusius. Until the discovery of the only spot in the world where the nuts grew, in the year 1743, they were solely known from having been found floating on the surface of the sea, in the Indian ocean, and near the Maldives islands, whence their French name was derived; and even in the time of Rumphius, the nut was spoken of as the " mirum miraculum naturæ, quod princeps est omnium marinarum rerum, quæ raræ habentur." The nut only was found floating, destitute of its husk, and mostly with the internal part decayed ; it was called " Calappa Laut" by the Dutch, and under that appellation Rumphius has given an historical account of it ; but fabulous as it is, he tells us, that many other tales were related to him respecting it, which were too absurd for him to detail.

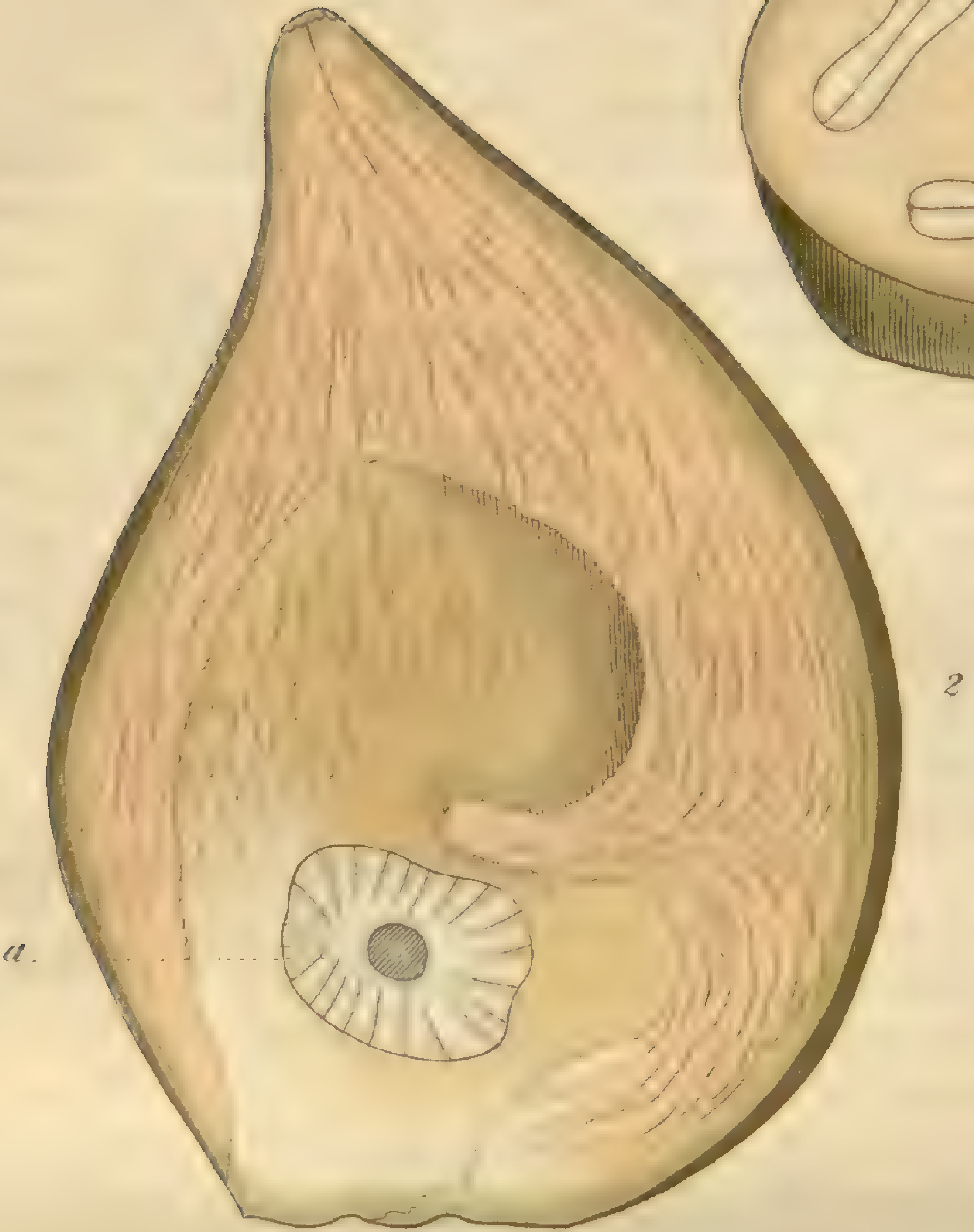
The *Double Cocoa Nut* is not, he assures us, a terrestrial production, which may have fallen by accident into the sea and there become petrified, as Garcias ab Orta relates ; but a fruit, probably growing itself *in the sea*, whose tree has been hitherto concealed from the eye of man. The Malay and Chinese sailors used to affirm, that it was borne upon a tree deep under water, which was similar to a Cocoa-nut tree, and was visible in placid bays, upon the coast of Sumatra, &c.; but that if they sought to dive after the tree it instantly disappeared. The negro priests declared it to grow near the island of Java, with its leaves and branches rising above the water, in which a monstrous bird, or griffin, had its habitation, whence it used to sally forth nightly, and tear to pieces Elephants, Tigers, and Rhinoceroses with its beak, whose flesh it carried to its nest ; furthermore, they avouched, that ships were attracted by the waves which surround this tree and there retained, the mariners falling a prey to this savage bird, so that the inhabitants of the Indian Archipelago always carefully avoid that spot.

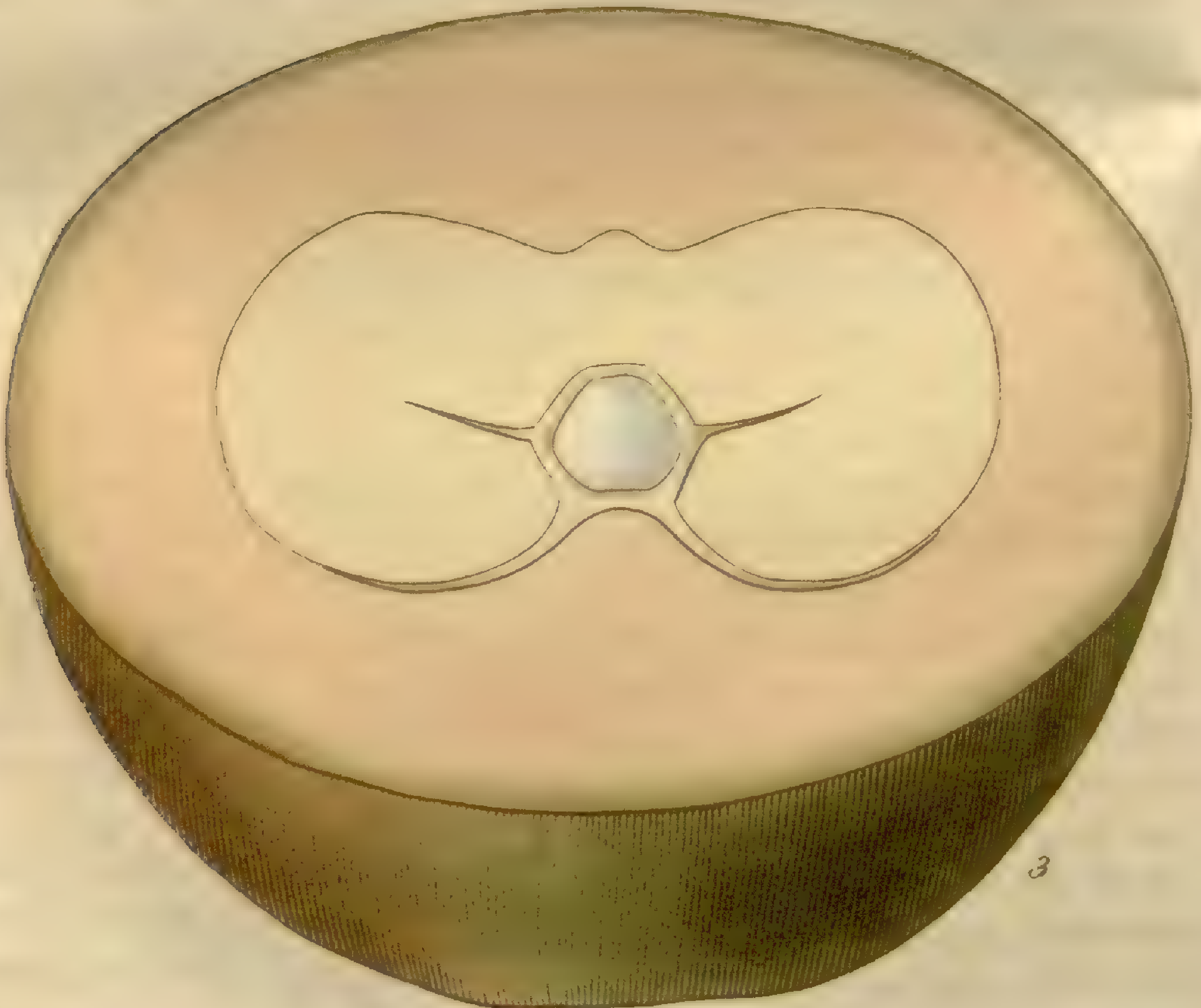
With such, and many even more strange ideas respecting its place of growth and history, it is not wonderful that this nut should have been highly prized ; and in the Maldivian islands, it was death to any man to possess it : all that were found became the immediate property of the king, who sold them at a very high price, or offered them as the most precious of regal gifts. Their value was estimated at from sixty to one hundred and twenty crowns ;

but

2737
D







— W.J.H. delt —

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but those nuts which measured as much in breadth as in length were the most esteemed; and those which attained a foot in diameter were sold for one hundred and fifty crowns. Nay, some kings have been so greedy of obtaining these fruits, as to have given a loaded ship for a single one.

The Chinese, as well as the natives of the Archipelago, are justly thought by RUMPHIUS to have set, *perhaps,* too high a value upon their medical properties, in considering them an antidote to all poisons. The principal virtue resided in the meat or albumen, which lines the nut, and which is so hard and corneous, as to be preserved for a length of time after the embryo is destroyed. This substance was triturated with water in vessels of porphyry, and, mingled with black and white, or red coral, ebony, and stags' horns, was all drunk together. The *Double Cocoa Nut* was also thought serviceable in all inflammations of the body; as a preservative against colic, apoplexy, epilepsy, paralysis, *et id genus omne.*

The great men formed of the shell, which possesses fewer medicinal properties, precious vessels, cutting off a transverse slice, which constitutes the lid; and in this they put their tobacco, betel, lime, and whatever else they masticate; believing they can never then be contaminated by any thing noxious. Water kept in it is considered to preserve those who drink of it from every complaint.

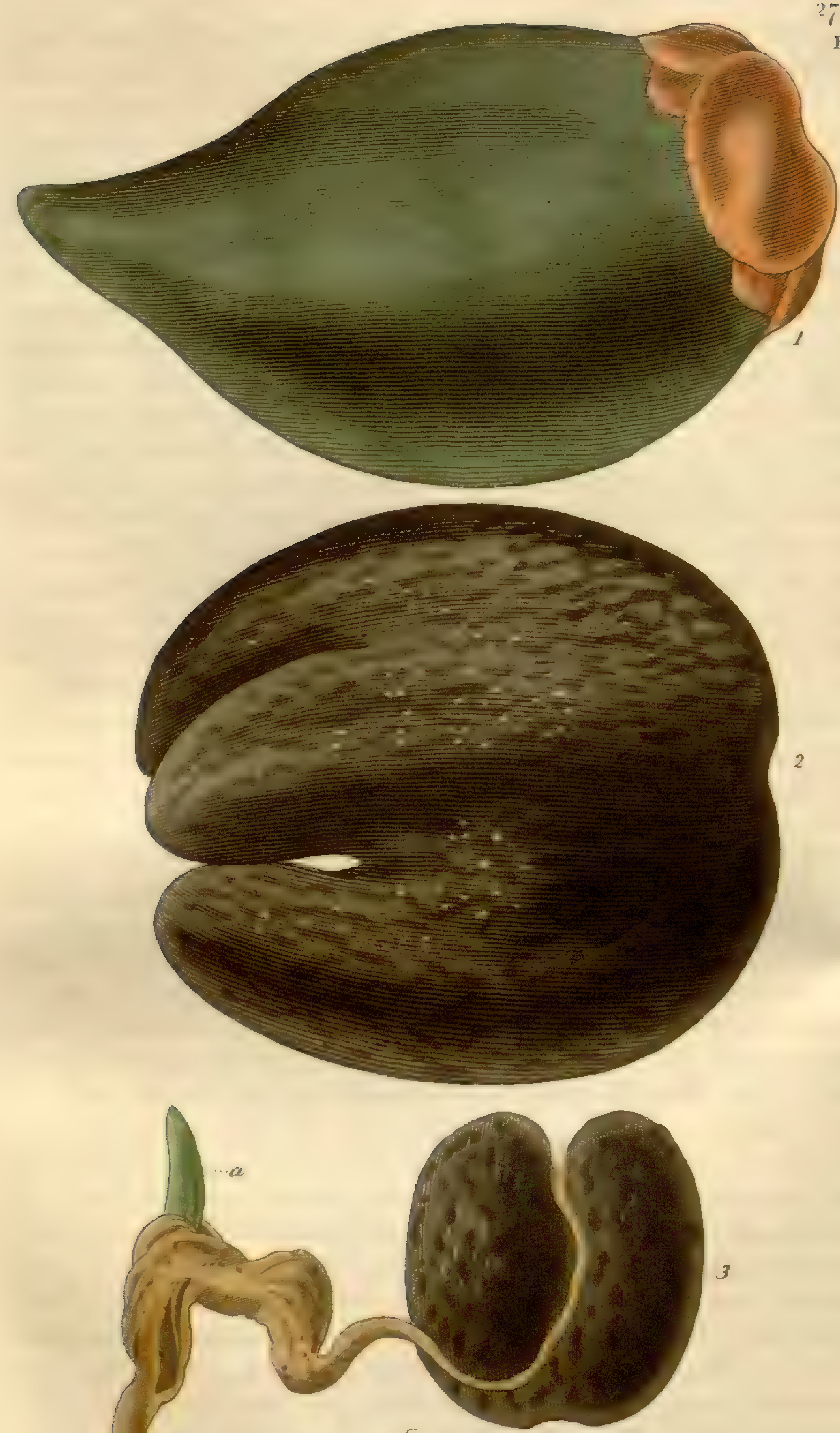
The discovery of the Seychelles Islands, and the knowledge thence derived, that these nuts grew upon trees, as other Cocoa-nuts, soon reduced the value of this commodity; and now, probably, by the Indians, as by the Europeans, it is only sought as a matter of curiosity, or for domestic purposes. The Botanical history of the tree, was, however, not the less a desideratum. The industrious SONNERAT gave a description of it, not a very scientific one, indeed, in his excellent Voyage à la Nouvelle Guinée, when he landed upon the *Isle Praslin,* or *Isle des Palmiers,* one of the Seychelles. The Tree is represented in the third plate of his work, and again in the frontispiece, and the Fruit, Nut, and sections of the Nut and the male Spadix, are given in the fourth, fifth, sixth, and seventh plates: he first introduced the tree into the Isle of France. COMMERSON described it in his MSS., under the name of *Lodoicea,* which has been since adopted; and, lastly, LA BILLARDIERE, in the ninth volume of the Annales du Muséum d'Histoire Naturelle, gave a Botanical description of it, and figures, from specimens preserved in spirits; together with a representation of the tree, from a drawing made in the Seychelles Islands, by M. LILET. This is followed by an account of the uses of the Palm, communicated to the Museum of Natural History at Paris, by M. QUÉAU-QUINCY, Correspondant et Administrateur Général des Isles Seychelles.

These accounts, in conjunction with some nuts that Mr. BARCLAY and myself received from our inestimable friend and correspondent, CHARLES TELFAIR, Esq. of the Mauritius, only served to stimulate our curiosity; and we requested Mr. TELFAIR, to procure, if possible, either from the Palms that he informed us were cultivated in the Isle of France, or from the Seychelles Islands, such specimens as would enable us to publish more satisfactory delineations than had yet appeared. The Isle of France Palms had not yet fructified; but Mr. TELFAIR lost no time in begging his friend J. HARRISON, Esq. of the Seychelles, to obtain the necessary specimens. With the utmost promptitude and kindness, that gentleman devoted several days to visiting, with a dozen of blacks, the Isles of Praslin and Curieuse; and in the midst of those little known islands, he not only made drawings from the living trees, but procured and forwarded to us, through Mr. TELFAIR, the Male and Female Spadices and Fruit, in different states, preserved in spirits, with Leaves, a Seedling Plant, and even with a portion of the Trunk. All these, except the fully ripened fruit, arrived in safety. A perfect representation, therefore, of the mature nut, is still wanting.

Much of the description of the plant here given has been communicated by Mr. HARRISON; and we have now to offer some further remarks, from the same valuable source.

The *Seychelles*, or *Mahé Islands*, as they are sometimes called, lie to the N. East of Madagascar, in about 5° S. latitude, and 55° E. longitude. It is in this groupe only, that the Palm is found, and among them, on no others than the *Isles of Praslin* and *Curieuse*, and *Round Island*. These are within half a mile of each other, mountainous and rocky, and the soil poor. The common Cocoa nut (Cocos *nucifera)* occupies the sea coast; but all other parts are, or have been entirely covered with "Cocos de Mer." "To behold these," says Mr. HARRISON, "growing in thousands, close to each other, the sexes intermingled;—a numerous offspring starting up on all sides, sheltered by the parent plants;—the old ones fallen into the sear and yellow leaf, and going fast to decay, to make room for the young trees,

2738
E



– W.J.H. delt –

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presents to the eye a picture so mild and pleasing, that it is difficult not to look upon them as animated objects, capable of enjoyment, and sensible of their condition."

A new leaf is formed upon the tree annually; and on falling away at the end of the year, it leaves a scar or ring: by these, it is estimated, that one hundred and thirty years are required before the tree attains its full development. The foliage is largest and most beautiful in young plants; the new leaf is always formed in the centre, and it shoots out perpendicularly, folded close like a fan from the top, to the length of ten feet, or more. In this state, it is of a pale yellow colour, and is employed for making hats and bonnets; afterwards it expands itself in all its beauty, and becomes green. There is a space of about four inches between the rings on the trunk. A *Coco de Mer*, planted on M. DE QUINCY's estate, on the Isle Mahé, is thirteen feet and a half high, has thirty-nine marks or rings, and was planted forty years ago; it is a female plant; but there being no male plant in the island, the fruit never comes to maturity.

The crown of the trunk, in the midst of the leaves, is called the cabbage, and is eaten like that of the true Cabbage Palm (ARECA *oleracea*); but it is less delicate, and slightly bitter; it is often preserved in vinegar.

The trunk itself, after being split and cleared of its soft and fibrous part within, serves to make water troughs, as well as palisades for surrounding houses and gardens.

The foliage is employed to thatch the roofs of houses and sheds, and even for the walls. With a hundred leaves, a commodious dwelling may be constructed; including even the partitions of the apartments, the doors and windows. In the Isle Praslin, most of the cabins and warehouses are thus made.

The down which is attached to the young leaves serves for filling mattrasses and pillows.

The ribs of the leaves and fibres of the petiole constitute baskets and brooms. The young foliage, as before mentioned, affords an excellent material for hats: for this purpose, the unexpanded leaves only are taken, dried in the sun, and cut into longitudinal strips, two or three lines in breadth, which are then plaited; and scarcely any other covering for the head is worn by the inhabitants of the Seychelles.

Out of the nut are made vessels of different forms and uses. When preserved whole, and perforated in one or two places, the shell serves to carry water; and two of them are suspended from opposite ends of a stick. Some of these nuts hold six or eight pints. If divided in two, between the lobes, each portion serves, according to the size and shape, for plates and dishes, or drinking cups; these being valuable from their great strength and durability: so that this kind of utensil, in the Seychelles Islands, bears the name of *Vaisselle de l'Isle Praslin*. And such is the estimation in which these nuts are held by the negroes and poor people of other islands, that the sailors always try to obtain, and make them part of the cargo of their vessels. Amongst other articles, shaving dishes, black, beautifully polished, set in silver, and carved, are made from them.

We have received from Mr. TELFAIR, at the Royal Glasgow Botanical Garden, a living nut of this rare Palm; but, although all possible care was taken in its treatment, it did not vegetate with us. We feel confident, however, of possessing living plants in our stoves ere long, as Mr. TELFAIR has promised us the nuts in an actual state of germination; which, with proper care on board of the ship, during the voyage, will reach us in safety *.

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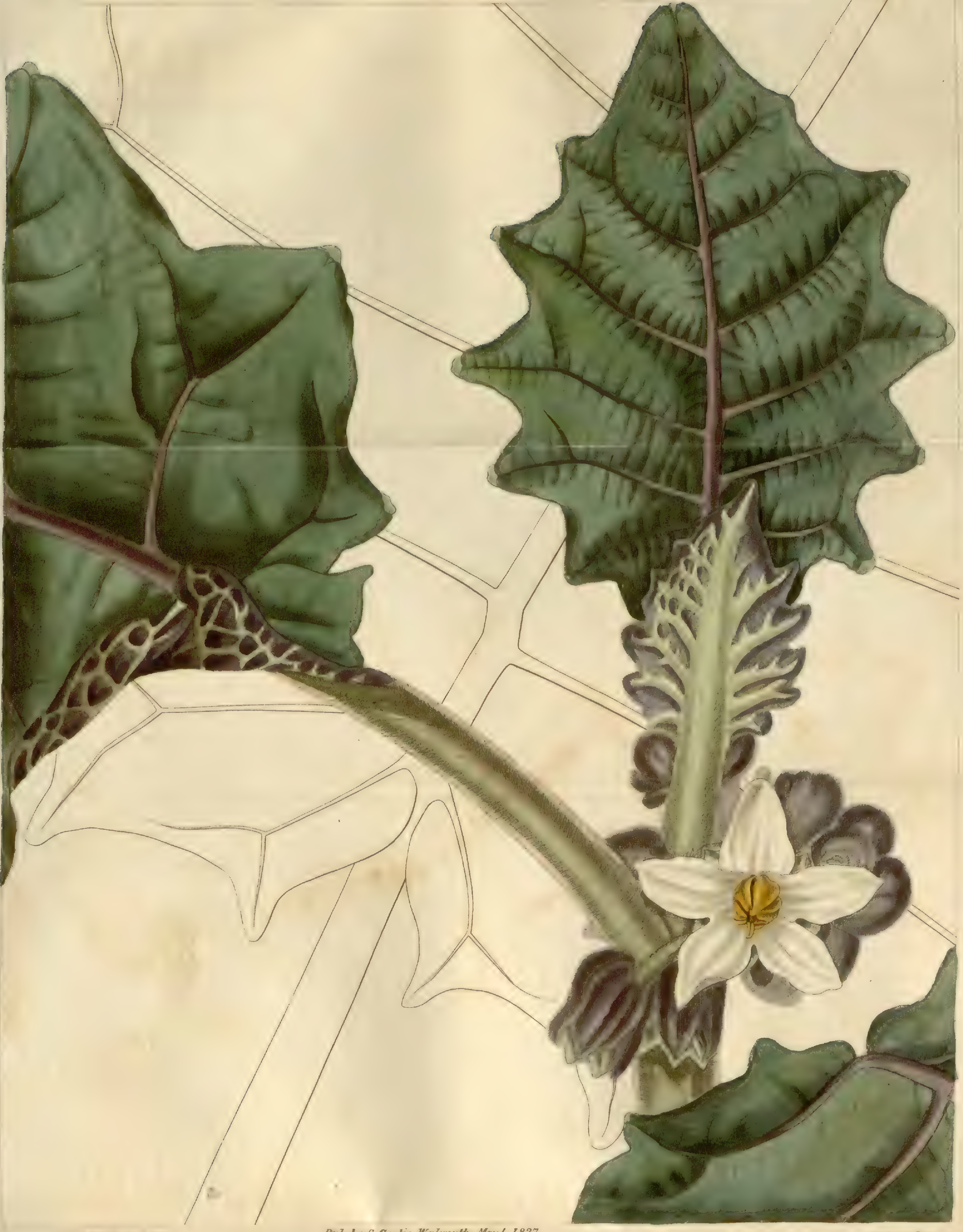
* Since the above was printed, Mr. BARCLAY and myself have received accounts of the arrival, in the river, of Germinating nuts of this most valuable plant; and we cannot doubt of soon seeing them flourishing in our stoves.

Reference to the Plates, 2734, 2735, 2736, 2737, 2738.

TAB. 2734 represents the Male and Female Palm.—T. 2735, f. 1, Male Spadix, *much diminished*. 2. Scales, with Stamens protruded, *natural size*. 3. Section of the Male Spadix, *ditto*. 4. Cluster of Male Flowers; *a*. the point of attachment to the Cell. 5. Single Flower, in bud. 6. the same expanded, *natural size*. 7. Bundle of Stamens, *slightly magnified*. 8. Single Stamens, *magnified*.—T. 2736. 1. Part of a Female Spadix. 2. Pistil. 3. One of the outer Segments of the Flower. 4. Inner Segment, *all reduced in size*. 5. Female Flower, *natural size*.—T. 2737. 1. Section of a Germen. 2, Vertical, and 3 Transverse Section of a young Drupe.—T. 2738. 1. Drupe. 2. Nut. 3. Nut in a state of germination.—*All much reduced in size*.



— C.M. Curtis. del. —

Pub. by S. Curtis Walworth May 1. 1827.

— Swan Sc. —

SOLANUM QUITENSE. ANGULAR-LEAVED DOWNY SOLANUM.

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Class and Order.

PENTANDRIA MONOGYNIA.

(Nat. Ord.—SOLANACEÆ.)

Generic Character.

Cal. 5—10 partitus. *Cor.* subrotata, 4—10-fida. *Antheræ* conniventes apice poro gemino dehiscentes. *Bacca* 2, 3, 4-locularis, placentis septo adnatis. *Semina* glabra.

Specific Character and Synonyms.

SOLANUM *Quitense;* inerme, caule suffruticoso, foliis subcordatis sinuato-angulatis utrinque tomentosis, racemis lateralibus brevissimis, hirsutissimis, bacca globosa.

SOLANUM Quittoense. *Lam. Ill. n.* 2326. *Encycl. Meth. v.* 4. *p.* 285. *Dunal. Solan. p.* 143.

SOLANUM Quitense. *Humb. et Kunth Nov. Gem. v.* 3. *p.* 25. *Syn. Pl. Œgr. v.* 2. *p.* 162. *Spreng. Syst. Veg. v.* 1. *p.* 679.

SOLANUM angulatum. *Ruiz et Pav. Fl. Per. v.* 2. *p.* 36. *t.* 170. *f.* a.

SOLANUM amplissimo, anguloso, &c. *Feuil. Per. Obs. v.* 3. *p.* 61. *t.* 46.

DESCR. Biennial: according to RUIZ and PAVON, six feet and more high, quite destitute of spines, rounded, greenish-brown, thick and succulent, densely hairy. *Leaves:* the lower, one and a half to two feet in length, cordato, sinuato-angulate, the angles callous at the tip, very downy, especially beneath, and there remarkably so in the young leaves, purple, very veiny; the veins purple, very prominent beneath. *Racemes* exceedingly short, axillary, clothed, as well as the five-parted calyx, with very densely, crowded, soft hairs, drooping.

Corolla large, pure white, purplish on the outside and there pubescent, rotate, almost two inches in diameter. *Anthers* very large, yellow, connivent, as long as, and concealing the *style*. *Fruit* a globose *Berry*, according to Flora Peruviana, of the size and colour of an orange, covered with a short down, at length glabrous, shining, fragrant.

Solanum *Quitense*, the very noblest species of the genus we are acquainted with, we had lately the pleasure of seeing in the garden where the drawing was made in October, 1826, that of our friend R. Barclay, Esq., at Bury Hill, Surry: it was growing in the open air to the height of five or six feet, and with its noble leaves, large white flowers, the thick and beautiful purple down which clothes its racemes, calyx, and the underside of its young foliage, exhibiting a truly handsome appearance.

Introduced by Mr. Barclay, from Peru, where it appears to be not uncommon, and where it is even cultivated in the gardens. The natives call the fruit *Orange de Quito (Naranjitas de Quito)*; and some drops of the juice are mixed with the drink called *Matte*.

This plant must prove a valuable addition to our gardens, treated as a hardy annual: probably, however, it will only ripen its fruit in the stove or greenhouse.

W.J.H. delt

Pub. by S. Curtis, Walworth, May. 1. 1827.

RHIPSALIS GRANDIFLORUS. LARGE-FLOWERED RHIPSALIS.

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Class and Order.

ICOSANDRIA MONOGYNIA.

(Nat. Ord.—CACTI.)

Generic Character.

Cal. superus, subquadrifidus. *Corolla* polypetala, una cum calyce persistens. *Antheræ* rotundatæ. *Stigma* 3—4-fidum. *Bacca* pellucida. *Semina* 12—20 intra pulpam nidulantia.

Plantæ *aphyllæ*. Caules *cylindracei nunc fasciculatim pilosi, obscure articulati.* Flores *parvi.*

Specific Character and Synonyms.

RHIPSALIS *grandiflorus;* parce ramosus, ramis suberectis subcalamiformibus nudis, spinulis minutissimis solitariis regulariter distantiusculis pallidis arcte appressis, floribus numerosis vix uncialibus. *Haw.*

RHIPSALIS grandiflorus. *Haw. Suppl. Pl. Succ. p.* 83. *Haw. Rev. of Succ. Pl. p.* 72.

CACTUS funalis. *Salm. Dyck. Index Pl. Succ. in Hort. Dyck.* 1822? *Spreng. Syst. Veg. v.* 2. *p.* 497.

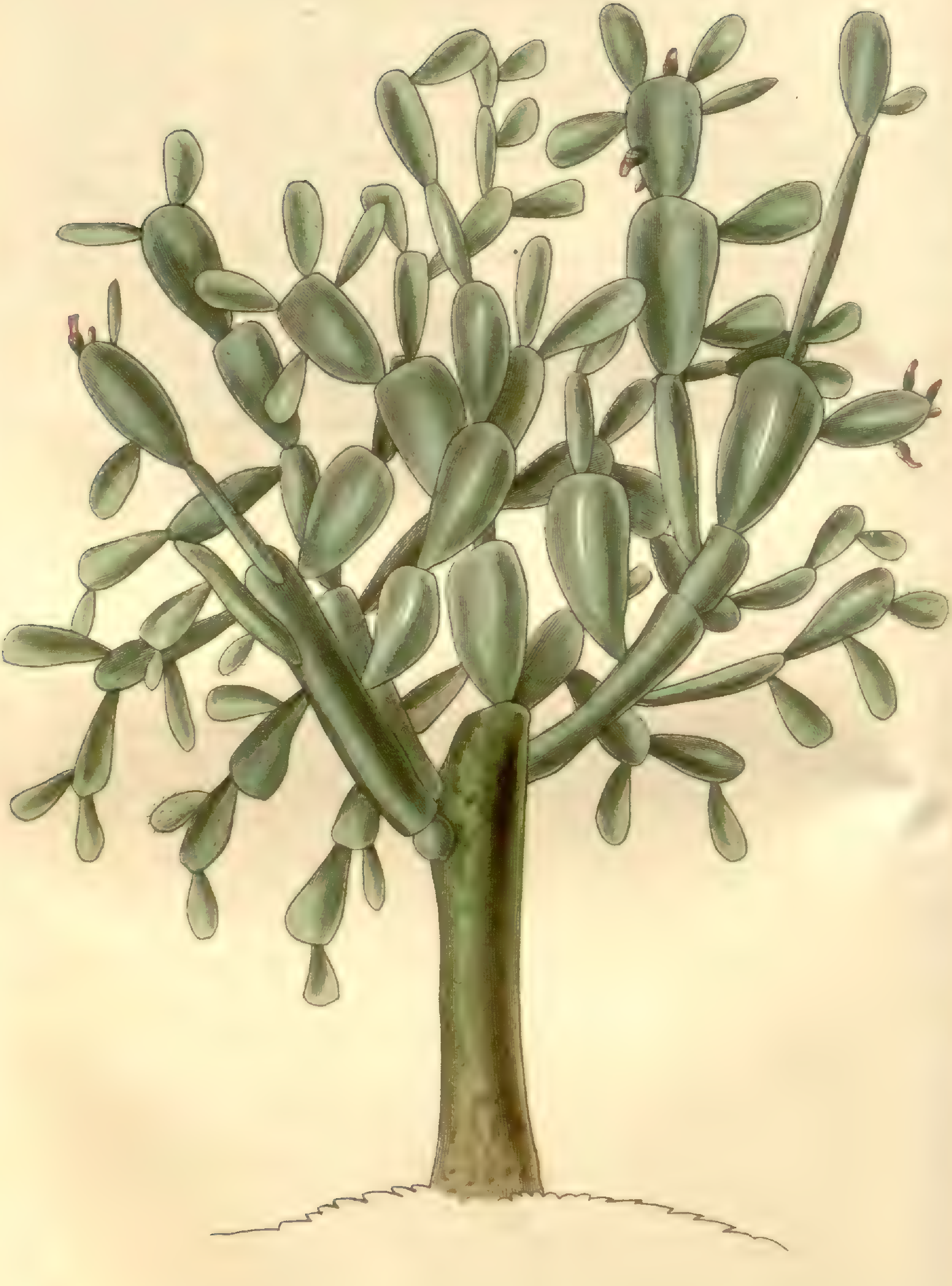
I have not had the satisfaction of seeing this plant in flower myself, and my description is, necessarily, taken from the drawing, aided by Mr. HAWORTH's description, and a plant without flowers in our Botanic Garden.

Probably, like the common R. *parasiticus,* it is a parasite upon the trunks of old trees. Its mode of growth is similar. The *stem* and *branches* are, however, much stouter, scarcely so regularly verticillate, and they have scattered dots upon them, as well as distantly placed, very minute spinules: the extremities of the branches are very obtuse. The flowers are numerous, especially upon the ultimate ramuli, sessile, an inch across, and, according to the drawing, the *Germen* is covered with scales. The lowermost and shorter of these scales are supposed to constitute the *calyx*; the upper interior ones the *corolla*; these are much the longest, and, as Mr. HAWORTH observes, become suddenly longer, linear-oblong; all of them pale yellow, with a brownish tinge on the outside: they spread out horizontally, or are even reflexed. *Stamens* very numerous: *Filaments* as long as the corolla, white: *Anthers* roundish, pale yellow: *Style* as long as the stamens, terminated by the four-rayed stigma.

Introduced to the Royal Gardens of Kew, by Messrs. BOWIE and ALLAN CUNNINGHAM, the King's collectors, in 1816. It blossomed there in the early part of the summer of 1826, when the drawing was made which Mr. AITON has kindly allowed us to introduce in this place.

The genus RHIPSALIS has already been adopted in the present work, and also by us in the Exotic Flora, as distinct from CACTUS: but, as we observed in the latter work, it is better characterized by habit, than by any essential marks in the fructification. The small number of divisions in the calyx and corolla, and the fewer stamens, we had formerly supposed to be useful points of discrimination; but, in this plant, we find them to be inconstant.

N. 2741.
A.



Pub. by S. Curtis Walworth 1 June 1827.

Rev. L. Guilding del.

Swan Sc.

CACTUS COCHINILLIFER. SPINELESS COCHINEAL FIG.

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Class and Order.

ICOSANDRIA MONOGYNIA.

(Nat. Ord.—CACTI. Div. OPUNTIÆ.)

Generic Character.

Cal. e squamis numerosis, imbricatis, superus. *Pet.* numerosa calyci inserta, interiora majora, basi coalita. *Stigma* multifidum. *Bacca* umbilicata, unilocularis, polysperma. *Semina* intra pulpam nidulantia.

Specific Character and Synonyms.

CACTUS *cochinillifer;* articulis obovatis compressis basi attenuatis inermibus, petalis conniventibus staminibus brevioribus.
CACTUS cochinillifer. *Linn. Sp. Pl. p.* 670. *Willd. Sp. Pl. v.* 2. *p.* 944. *Ait. Hort. Kew. ed.* 2. *v.* 3. *p.* 179. *Andrews Repository, t.* 533. *Sprengel Syst. Veg. v.* 2. *p.* 497 (non C. coccinellifer. *De Cand. Plantes Grasses.*).
OPUNTIA cochinellifera. *Haw. Syn. Pl. Succ. p.* 192.
OPUNTIA maxima, &c. *Sloane Hist. Jam. v.* 2. *p.* 152. *t.* 8. *f.* 1. 2.
FICUS indica major lævis, &c. *Pluken. Alm. p.* 146. *t.* 281. *f.* 2.
TUNA mitior flore sanguineo cochinellifera. *Dill. Elth. p.* 399. *t.* 297. *f.* 383.

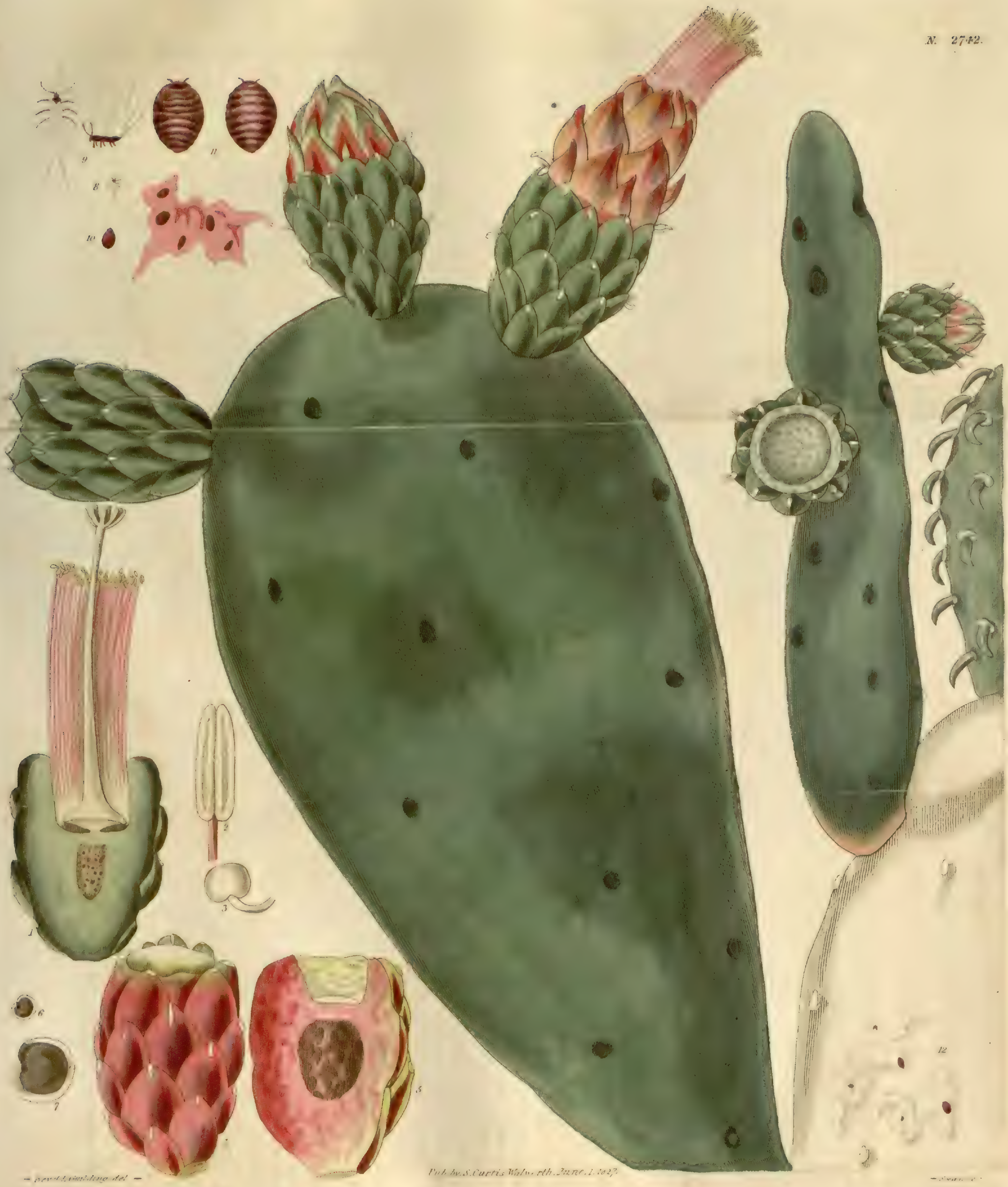
DESCR. This CACTUS may almost be reckoned arborescent, for it grows to the height of nine feet. The lower and older parts of the *stem* and *branches* are cylindrical, or but slightly compressed, of a greyish ash colour, and woolly; the younger branches are every where proliferously jointed, their joints varying in size, from four to six inches, to a foot in length, oblong or obovate, more or less attenuated at the base, all of them much compressed, flattened, of a deep full-green colour, when young having several scattered, fleshy, curved, subulate *leaves,* scarcely half an inch long, which soon fall off, leaving a white scar. There are no spines.

The flowers, which are three inches or more long, appear in the joints at the extremities of the branches, and generally at or near their superior margins. The base is occupied by the large, fleshy, obovate, truncated, reticulated, dark-green *germen,* whose areolæ constitute an oblong swelling or tubercle, tipped at the apex by a white scar, whence small leaf-like processes have fallen, and above which is a small fascicle of fine hairs or bristles. This has one cell filled with ovules, attached to a curved seedstalk. *Calyx* of many ovate or obovate, very acute, erect, greenish-red scales, gradually passing into the broader and larger, obtuse, very closely imbricated, connivent, bright rose-colored *petals. Stamens* much protruded, very numerous, rose-colored, their base sunk into the top of the *Germen,* forming a cylindrical mass, united below. *Filaments* very slender. *Anthers* oblong, pale yellow. *Style* dilated near the base, but again suddenly contracted at the very base, tapering upwards to the length of the stamens, and terminated by a cup-shaped *stigma,* cut into from five to eight yellow-green rays. After the falling away of the *Calyx, Corolla, Stamens,* and *Pistil,* a considerable hollow remains on the top of the germen, and this latter, scarcely increasing in size, or altering its form, becomes a *Berry* of a fine red colour within and without, having, in the centre, a number of nearly reniform, compressed *seeds,* enveloped in pulp.

There are few tribes of plants that require illustration, by the aid of the pencil, more than the CACTUSES; they cannot be preserved in the Herbarium, nor so easily described in words, as many other plants. An idea, too, has been very generally current, that they are liable to much variation; but from what we have ourselves seen of them in a state of cultivation, we think ourselves warranted in considering them to be tolerably constant to their character.

With regard, too, to that particular species of CACTUS, which nourishes the Cochineal Insect, much doubt has existed; and we believe it must be allowed, that our plant, which was named by LINNÆUS, and has been almost universally called the C. *cochinillifer,* is not that which produces the best Mexican Cochineal; nor are we prepared to say,

N. 2742.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Revd L. Guilding del.

Pub. by S. Curtis Walworth June 1. 1827.

Swan sc.

say, of what part of South America it is a native. Linnæus speaks of it as indigenous to Jamaica and the warmer parts of the New world; but Sloane, who gives a very tolerable figure of it, says, that the plants he saw, in Mr. Worley's plantation, were brought from the main Continent of America, by a Spanish priest, and affirmed to be the species on which grew the Cochineal.

We know our present subject to be the true C. *cochinillifer* of Linnæus, by his references to various figures, especially to that of Dillenius, in the Hortus Elthamensis above quoted; and that author considers it may be the same as the *Nocheznopalli* or *Nopelnochetzli,* figured in Hernandez; except that, in the latter plant, the flowers are spreading, whilst in our's, the petals are connivent. He does not say where it is indigenous. In the Chelsea garden according to Ray, it was cultivated prior to 1688, and was received from Barbadoes.

Ulloa, not upon his own authority, as it appears, but on that of well informed travellers, states, that the *Cochineal Cactus* has no spines, and a fruit imbued with a deep-red pulp. This is partly contradicted by Clavigero, who says, " in Misteca, where I was for five years, I always saw the insect upon prickly Nopals. M. de Raynal imagines, that the colour of the Cochineal is to be ascribed to the red fig on which it lives; but that author has been misinformed; for neither does the Cochineal feed upon the fruit, but only upon the leaf, which is perfectly green; nor does that species of Nopal bear *red,* but *white* figs." It is true, Clavigero adds, " it may be reared upon the species with a red fig; but that is not the proper plant of the Cochineal."

De Candolle, in his beautiful work entitled " Plantes Grasses," has given, as the Cactus *Coccinellifer,* the C. *Tuna* of Linnæus, a plant totally distinct from the Linnæan *cochinillifer,* and whose flower is of a different structure.

Thierry de Menonville, who so courageously procured[*]
the

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[*] This circumstance is thus related by Dr. Bancroft, in his valuable " Researches on the Philosophy of Permanent Colours." In the month of January, 1777, M. Thierry de Menonville left Port au Prince, in St. Domingo, for the purpose of procuring some of the living Cochineal Insects in Mexico, and bringing them away to be afterwards propagated in the French West India Islands; an enterprize, for the expence of which, four thousand livres had been allotted by the French Government. He proceeded, by the Havannah, to la Vera Cruz, and was there informed, that the finest Cochineal Insects were produced at Guaxaca, distant about seventy leagues. Pretending
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the Cochineal Insect and the CACTUS from Guaxaca, and transported them to St. Domingo, and who unquestionably had the best means of determining the kinds of CACTI, cultivated for the Insect, describes particularly *three* sorts, on which it may be reared and cultivated to advantage.

1. The CACTIER *Nopal;* upon which *alone* the Cochineal is reared in Mexico, both the fine and the common Cochineal (la Cochenille *fine* et *sylvestre*) although there are throughout the country, many other kinds of CACTUS. The two following, therefore, it is presumed, are employed in St. Domingo.

2. The CACTIER *Splendide;* which may be used to equal advantage with the former; and

3. The CACTIER *de Campêche.*

Of these, the first, as far as can be determined by description, for the writer had never seen the flower or fruit, is the CACTUS *Tuna* of LINNÆUS; C. *coccinellifer* of DE CANDOLLE.

The second appears from the account to be very similar to the former, but larger in its joints (some of them thirty inches long), and very glaucous.

The third, the C. *de Campêche,* is, I think, without a doubt, our C. *cochinillifer,* for his whole description, and especially the flowers and fruit, entirely correspond; and he

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ill health, he obtained permission to use the baths of the river Magdalena; but instead of going thither, he proceeded, through various difficulties and dangers, as fast as possible, to Guaxaca; where, after making his observations, and obtaining the requisite information, he affected to believe that the Cochineal Insects were highly useful in compounding an ointment for his pretended disorder (the gout), and therefore purchased a quantity of Nopals, covered with these Insects, of the fine or domestic breed, and putting them in boxes with other plants, for their better concealment, he found means to get them away as Botanic trifles, unworthy of notice, notwithstanding the prohibitions by which the Spanish Government had endeavoured to hinder their exportation; and being afterwards driven by a violent storm into the bay of Campeachey, he there found and added to his collection a living CACTUS, of a species which was capable of nourishing the fine domesticated Cochineal; after which, departing for St. Domingo, he arrived safe, with his acquisitions, on the twenty-fifth of September, in the same year, at Port au Prince. Though almost unaided, M. THIERRY de MENONVILLE, there persevered in cultivating, not only the *fine* Cochineal (which he brought from Mexico) but also the *Sylvestre,* which he afterwards found wild in St. Domingo, and so successfully, that in 1789, there were more than four thousand plants in a single Nopalery, the produce having been ascertained by chymists to be equal in quality to that of Mexico. The political troubles in St Domingo consequent upon the French Revolution, caused the total destruction of these plantations.

he says of it, from his own experience, that it may be usefully employed for rearing the COCHENILLE *sylvestre*, and may even support a small quantity of the fine kind.

The celebrated HUMBOLDT also, although he allows that it is the plant upon which the Cochineal has often been sent to Europe, asserts, that our CACTUS *cochinellifer* is not the individual of the Mexican Nopaleries, which he makes a new species, under the name of C. *Bonplandii;* and he quotes under it, with a mark of doubt, the CACTUS *Tuna* of LINNÆUS.

At Rio de Janeiro, when that place was visited by the Chinese Embassy, under Lord MACARTNEY, there were considerable plantations of CACTUS, for rearing the Cochineal, which had some time previously been introduced into Brazil; and the plant, which is the CACTUS *Tuna*, is represented on the twelfth plate of the Atlas of that work.

I shall further, upon the subject of the kinds of CACTUS employed in rearing the Cochineal, only add, that my excellent friend, the Rev. L. GUILDING, who sent me most splendid drawings of this particular CACTUS, and from which most of the accompanying figures were executed, wrote me two years ago from St. Vincent, "I possess a considerable nursery of this CACTUS inhabited by thousands of the true *Coccus Cacti;* and I do not despair of being able to send to the Society of Arts a large quantity of dried insects, before the termination of the present year." In the East Indies also, the Insect has been extensively propagated; but we have not had the means of knowing whether successfully or otherwise.

From all this, we think it may be inferred, that, in Mexico and Brazil, the CACTUS *Tuna* is the favorite food of the Cochineal; and that in the West Indian Islands, where the C. *Tuna* is, perhaps, less frequent, the C. *cochinillifer* is employed by the natives, and answers the purpose sufficiently well.

Mr. GUILDING, indeed, thinks it probable, that the C. *cochinilifer* was introduced to St. Vincent's, from Mexico; but he is, perhaps, led to this supposition, from the generally prevalent idea, that it is the species, on which the Cochineal of the Mexicans is reared.

Like all its congeners, C. *cochinilifer* increases readily by having the joints stuck into the ground; and the plant loves dry and barren spots. If cultivated for the purpose of rearing the *Coccus*, it must be defended, at least in the rainy island of St. Vincent, from storms and winds, by sheds placed to windward. It there blossoms all the year.

The flowers, from which some of the dissections here given were drawn, were produced in the stove of the Glasgow Botanic Garden, in September, 1826.

The Cochineal Insect, which feeds upon the kinds of *Cactus* just mentioned, is too well known to need a particular description here; as are also its valuable properties in producing the dye, which bears its name, and carmine. It is the *Coccus Cacti* of LINNÆUS, a small Insect of the order *Hymenoptera*, having a general appearance not very dissimilar to that of the Mealbug of our gardens, and equally covered, with a white powdery substance. The male is winged. It is originally a native of Mexico, and was cultivated for its precious dye, long before the conquest of that country; and these plantations, called *Nopaleros*, are most extensive in the Misteca and Oaxaca: the latter district alone has exported, according to HUMBOLDT, upon the average, 32,000 arobas annually, estimated at 2,400,000 piastres, above £500,000 sterling.

A representation of a Mexican Nopalery, is given in SLOANE's Jamaica, vol. 1, t. 9, from a drawing, made at Guaxaca, by an Indian: that author, however, particularly states, that though the plant be a kind of *prickly pear*, it has no thorns. In these small plantations or enclosures, they cultivate, either the fine sort *(Grana fina* of the Spaniards) or the common kind *(Grana sylvestre)*, which differ, by the first having a finer quality, and more powdery covering, whilst the latter, less valuable in its produce, has a cottony covering, : but whether or not these two insects be specifically distinct, has not been determined. The placing of the females, when big with young, upon the CACTUS, is called the sowing. The proprietor of a *Nopalery* buys in April or May, the branches or joints of the *Tunas de Castilla (*CACTUS *Tuna?);* which are sold in the markets of Oaxaca, at about three francs a hundred, loaded with young Cochineals. *(Semilla)*. These are kept in cellars for twenty days, when they are exposed to the air, suspended under a shed. So rapid then is the growth of the insect, that by August or September, the females are big with young, and ready for the sowing, which is done in small nests, made of the fibrous parts of the foliage of a *Tillandsia*, called *Paxtle*. In four months from the time of sowing, the harvest commences. The insects are brushed off, with a squirrel's or deer's tail, by women, who sit during this operation, for whole hours, at one Nopal plant; so that, were it not for the extreme cheapness of labour in that country, Humboldt assures us, that the rearing of Cochineal, would prove an unprofitable employment. After being gathered, the insects are killed by boiling water; or by exposing them in heaps to the sun; or by means of the vapour baths of the Mexicans *(temazcalli)*; and when dry, they are fit for exportation. By the latter method, the powdery substance is preserved, which increases the value of the insects in commerce.

Doctor Bancroft has estimated the annual consumption of Cochineal in Great Britain only, at about seven hundred and fifty bags, or 150,000 ℔s., worth £275,000, " a vast amount," as the authors of the introduction to Entomology observe, " for so small a creature, and well calculated to shew us the absurdity of despising any animals, on account of their minuteness." According to the same writers, the only kind of Cochineal that has been conveyed to the East Indies, is the *Sylvestre* from Brazil; and the Court of Directors of the East India Company offered a reward of £6,000 to any person who should introduce the more valuable sort.

Since our plate and description of this plant were completed for publication, unfortunately, too late to render that justice to them which the subject required, we have been most obligingly favoured by W. T. Aiton, Esq. with a drawing and specimens of the Insects, from the Royal Gardens at Kew; which we have added to our plate. Their introduction to the Royal Gardens was in the year 1814, from Martinico, by Mon. Castelneau d'Auros, late superintendent of the Botanic Garden on that island.

Tab. 2741, A. entire plant, much reduced.

Tab. 2742, B. f. 1. Section of the Flower, *natural size*. 2. Anther, *magnified*. 3. Ovule *ditto*. 4, Ripe Fruit, and 5, Section of ditto, and 6, Seed from ditto, *natural size*. 7. Seed, *magnified*. 8. Male Cochineal Insect (Coccus Cacti) *natural size*. 9. Two of the same, *magnified*. 10. Female Insect, *natural size*. 11. Two of the same, *magnified*.

N. 2743.

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Pub by S. Curtis Walworth June 1. 1827.

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CUNNINGHAMIA LANCEOLATA. LANCE-LEAVED CUNNINGHAMIA.

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Class and Order.

MONŒCIA TRIANDRIA.

(Nat. Ord.—CONIFERÆ.)

Generic Character.

CUNNINGHAMIA. *Br. MSS.* non *Willd. Rich.* MASC. *Ament.* ovatum, squamis dense imbricatis, unguiculatis, dorso triandris, antheris 1-locularibus dependentibus.—FŒM. *Ament.* subovatum, squamis imbricatis, extus bracteola adnata munitis, intus 3-floris; floribus inversis. FRUCT.: *Strobili* ovati; bracteolæ dense imbricatæ, duræ, squamis majores, basi pericarpia tria compressiuscula, subcoriacea, in alam brevem a lateribus desinentia foventes. *Embryo* cylindricus, fere longitudine endospermii, 2-cotyledoneus; cotyledonibus obtusis.

Arbor, foliis *solitariis, sparsis, sessilibus, angusto-lanceolatis, rigidis et subspinescentibus. Richard.*

Specific Character and Synonyms.

CUNNINGHAMIA *sinensis.*
CUNNINGHAMIA sinensis. *Richard Conif. p.* 80.
BELIS jaculifolia. *Salisb. in Linn. Trans. v.* 8. *p.* 316. *Sprengel Syst. Veget. v.* 3. *p.* 888.
PINUS lanceolata. *Lamb. Pin. p.* 52. *t.* 34. *Willd. Sp. Pl. v.* 4. *p.* 505. *Ait. Hort. Kew. ed.* 2. *v.* 5. *p.* 320. *Smith in Rees Cycl.*
PINUS Abies. *Lour. Coch. v.* 2. *p.* 710. (excl. syn. plerisque.)
ABIES major sinensis, &c. *Plukn. Amalth. p.* 1. *t.* 351. *f.* 1.

DESCR. A *tree,* as it would appear, of considerable size, with opposite, cylindrical branches and numerous linear-lanceolate, cuspidate, rigid *leaves,* scattered, as to their insertion, but more or less distichous in direction, slightly

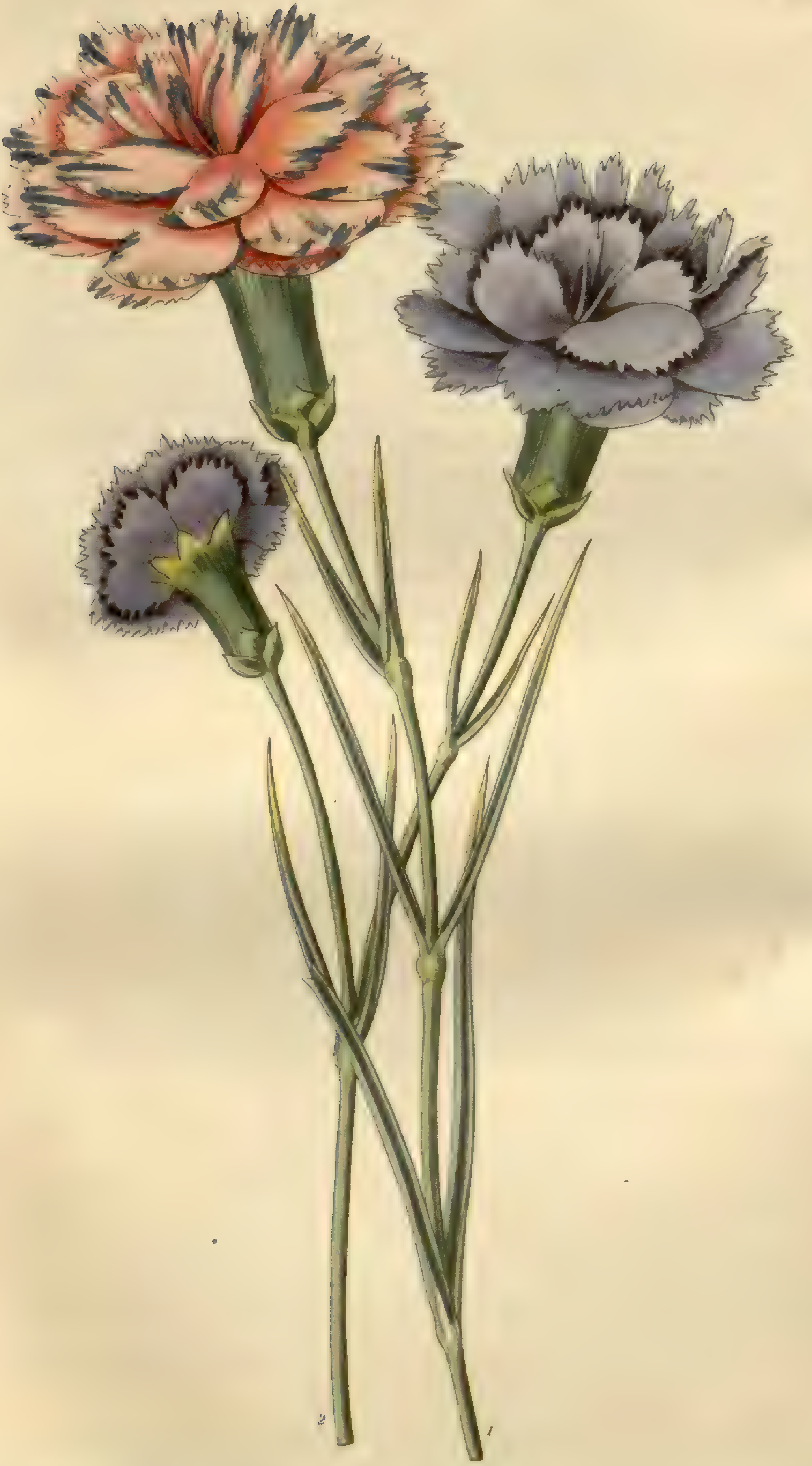
tapering at the base, sessile, and there obliquely twisted, acuminate at the upper extremity, the margin finely spinulosely serrate, the upper surface dark, shining green, with two depressed longitudinal lines, the under very glaucous, except on the midrib and at the margin. *Male Catkins* at the extremity of the younger branches, surrounded at the base by several green, obtuse, imbricated scales, themselves formed of a number of triangular, brown, serrulated, peltate *scales*, bearing on their lower margin three or four pendent, oval, one-celled *anthers*, opening internally with a longitudinal fissure: *Pollen* yellow, globular. The *fruit* is, according to RICHARD, an ovate *Cone*, whose scales are coriaceous, reddish, somewhat triangular, shortly unguiculated, the margin minutely toothed, having, within, the floriferous scale, which is free at the top and denticulated, immediately beneath which, the three pericarps are seen pendent, obovate, compressed, fixed near the upper extremity, which is truncated, while the base is emarginate, the margin alate. *Albumen* formed like the seed, enclosing a nearly cylindrical dicotyledonous *Embryo*, its radicle pointing downwards.

It was our good fortune to have, in the stove of the Botanic Garden of Glasgow, a plant of the CUNNINGHAMIA, *lanceolata* bearing its male flower in the winter of 1826—7: and thus, by the aid of RICHARD's figures, for the female part of the fructification, to offer, we trust, a satisfactory delineation of this rare plant. It was introduced from China to the Royal Gardens at Kew, in 1804, and, by Mr. AITON, kindly given to us.

Mr. LAMBERT has published a splendid figure of it from dried specimens; but the male flowers he had never seen, and only a very young male amentum seems to have been known to RICHARD. Mr. SALISBURY called the genus BELIS, a name that has been considered too nearly allied to BELLIS, and hence originated that of CUNNINGHAMIA, given by Mr. BROWN, to commemorate the merits of Mr. JAMES CUNNINGHAM, "an excellent observer in his time, by whom this plant was discovered; and in honour of Mr. ALLAN CUNNINGHAM, the very deserving Botanist who accompanied Mr. OXLEY in his first expedition into the interior of New South Wales, and Capt. KING in all his Voyages of Survey of the Coast of New Holland."

Fig. 1. Scale of the Male Flower, with three, and fig. 2 ditto, with four Anthers. 3. Cone. 4. Scale of ditto, with three Seeds. 5. Section of a Seed.—*All but fig.* 3 *magnified.* Fig. 3, 4, and 5 from Richard.

N. 2744.



- Mrs Bewick del. -

Pub. by S. Curtis, Walworth. June 1. 1827.

DIANTHUS CARYOPHYLLUS. VARIETIES OF PICOTEES.

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Class and Order.

DECANDRIA MONOGYNIA.

(Nat. Ord.—CARYOPHYLLEÆ.)

Generic Character.

Cal. cylindricus, 1-phyllus: basi squamis 4. *Petala* 5, unguiculata. *Caps.* cylindrica 1-locularis.

Specific Character and Synonyms.

DIANTHUS *Caryophyllus*; caule ramoso, floribus solitariis, squamis calycinis brevissimis ovatis submucronatis, petalis latissimis imberbibus, foliis lineari-subulatis canaliculatis glaucis. *D. C.*
(α.) flore simplici. *Engl. Bot. t.* 214.
(β.) flore pleno.
petalis fulvis, apice plumbeo-maculatis. *Close-House Carnation, f.* 1.
petalis lurido-purpureis. *Mrs. Bewicke's Carnation, f.* 2.

Mrs. BEWICKE, of Close-House, Northumberland, having imported a considerable number of rare Carnations from Brussels, was kind enough to send us drawings of a variety of them, from which we have selected the two given in the annexed plate, as the most unlike any that we have hitherto seen.

If we occasionally trespass on the department of the Florist, we hope our readers will excuse us. In this instance, the singular display of unusual colours amongst *Picotees* tempted us to select those here represented from a number of others.

The *Picotee* is a term, used amongst Florists, for those varieties of the Carnation which have their colours like a fringe round each petal, instead of distinct stripes running through from the apex to the base: they are of more modern culture than the Carnation; and as regards those with yellow grounds, are more tender, almost requiring a greenhouse treatment during the winter. Their introduction to this country was from Italy; but whether the produce of that country, or from whence originally obtained, Florists do not seem to know. Their excellence consists in strongly marked colours on a white or yellow ground; and if several colours unite in the same flower the better; it is also a perfection to obtain them rose-leaved; i. e. free from the jagged edging of the petals.

The singular colours of those introduced by Mrs. Bewicke forms a new feature and object of pursuit for the Florist; they were obtained with some difficulty by her from Brussels, where they were considered rare, and flowered with her, at Close-House, near Newcastle-on-Tyne, in the summer of 1826. Her gardener treated them exactly in the same manner as the other Carnations in pots, and kept them in the open air. A rich compost of rotten manure and good loam, well mixed by turning it two or three times in the winter, for spring potting, is the best for all kinds of Carnations. C.

N. 2745.

W.J.H del.

Pub by S. Curtis, Walworth, [illegible]

CAMELLIA JAPONICA, *flore simplici, albo.*

SINGLE WHITE-FLOWERED CAMELLIA, OR JAPAN-ROSE.

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Class and Order.

MONADELPHIA POLYANDRIA.

(Nat. Ord.—CAMELLIEÆ. *D. C.*)

Generic Character.

Cal. imbricatus. *Stam.* basi polyadelpha aut monadelpha. *Antheræ* ellipsoideæ. *Capsula* valvis medio septiferis, axim triquetrum liberum post dehiscentiam relinquentibus. *D. C.*

Specific Character and Synonyms.

CAMELLIA *japonica;* foliis ovatis acuminatis acute serratis, floribus terminalibus subsolitariis. *D. C.*
Var. Flore albo simplici. *S. Curtis, Monogr. of Camellia* cum Ic. *Bot. Reg. t.* 353.

DESCR. The single white CAMELLIA possesses the same claims to our admiration, as so many of the other varieties of the species, which promises to be as sportive, when raised from seed, as the Roses themselves. The Plant in question is supposed to be the produce of seed from the striped CAMELLIA, and raised by Mr. ROLLINSON, of Tooting.

Our readers are referred to Mr. SAMUEL CURTIS's work above quoted, for the most splendid figures of the different varieties of CAMELLIA, and for a detailed history of them, with an account of their mode of treatment. That author justly remarks, "that they possess good natural constitutions to bear the variety of treatment they meet with; for they are obliged to submit to all temperatures, from that of the open air, to the heat of the Pine stove. As to soil they grow best in about one-third of good bog earth, and two-thirds of rich sandy loam."

It was our intention, in order to complete the Botanical character of the genus, to have added to the accompanying plate, figures of the fruit and seed, which are exceedingly handsome, and, of which, we know not that a good representation has been given. For this purpose we are in possession of a beautiful drawing, recently made, by Miss C. CURTIS; but each of the two fruits (of the WARATAH CAMELLIA) being as large as a moderate sized apricot, they will, together with the seeds, occupy more space than we can here afford; and as we are in expectation of soon figuring two new kinds of CAMELLIA, from Mrs. PALMER of Bromley (one supposed to be the finest sort yet known, var. *Rawesiana*), we shall take that opportunity of introducing the fruit.

Fig. 1. Portion of the Stamens, shewing how they are united at the base. 2. Front view of a Stamen. 3. Back view of ditto. 4. Pistil. 5. Section of the Germen.—All more or less *magnified*.

N. 2746.

— W J H del. — Pub. by S Curtis Walworth June 1. 1827 [illegible]

PLEUROTHALLIS FOLIOSA. LEAFY FRAGRANT PLEUROTHALLIS.

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Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ. Div. IV. Anthera terminalis mobilis decidua; Massæ pollinis demum cereaceæ. *Br.*)

Generic Character.

Labellum articulatim connexum cum basi simplici vel brevissime producta columnæ. *Petala* 2 antica exteriorum inferne connata. *Massæ* pollinis 2, exsulcæ. *Br.*

Specific Character.

PLEUROTHALLIS *foliosa;* bulbo oblongo compresso basi apiceque folioso, scapis multifloris, petalis angusto-lanceolatis patentissimis, labello ovato reflexo basi longitudinaliter bituberculato membranisque duabus erectis.

DESCR. Parasitic. *Roots* thick, fleshy, whitish, mostly simple. *Bulb* about four inches long, oblong, compressed, obscurely striated, green, having a few distichous, sheathing *leaves* at the base, and two linear-lanceolate acute ones at the top, of a coriaceous, rather than membranaceous texture. *Scapes* two, springing from within the radical leaves, one on each side the narrow edge of the bulb; 6—8 inches long, nearly erect, compressed, having several sheathing scales which pass upwards into membranous, lanceolate *bracteæ,* as long as the germen. *Flowers* numerous, yellow, very fragrant. *Petals* spreading horizontally, lanceolate, acute, waved, the two lower ones united at the base under the lip. *Lip* standing forward, ovate, acute, entire, its upper half reflexed; its lower, furnished with two

longitudinal tubercles, which, at the very base, rise into two erect membranes, embracing the lower part of the column. *Column* about half as long as the petals, semi-terete, yellow, with a bright-red mark below the stigma. The *Anther-cases* had all fallen from our plant. *Pollen Masses* obovate, waxy, with a depression at the back, fixed to a linear, white *footstalk*, having a reddish gland at the base. *Germen* linear, clavate, not twisted.

Communicated from the Dublin College Botanic Garden, by J. T. Mackay, Esq. who received it, in 1825, from Brazil. It flowered in the month of February (1827), and yields so delightful a fragrance (resembling, as it appears to us, that of the Cowslip), as to be well worthy of cultivation in every stove. The whitish, membranous bracteæ remain after the flowers have fallen, and give a singular appearance to the old scapes.

Fig. 1. Flower. 2. Lip. 3. Flower from which the Lip has been removed. 4. Superior side of a Pollen Mass. 5. Inferior ditto.—All more or less *magnified*.

N. 2747.

W.J.H. del.

Pub by S. Curtis, Walworth, June 1 1827.

ACACIA MUCRONATA. MUCRONATED ACACIA.

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Class and Order.

POLYGAMIA MONŒCIA.

(Nat. Ord.—LEGUMINOSÆ.)

Generic Character.

Flores polygami. *Cal.* 4—5-dentatus. *Petala* 4—5, nunc libera, nunc in corollam, 4—5-fidam coalita. *Stam.* numero varia, 10—200. *Legumen* continuum. *De Cand.*

Specific Character and Synonyms.

ACACIA *mucronata;* petiolis lineari-spathulatis apice obtusis oblique mucronatis subtrinerviis integerrimis glabris, spicis axillaribus solitariis vel binis, calyce brevi corollaque quadrifidis.

ACACIA mucronata. "*Willd. Enum. Suppl. p.* 68." *Wendland, Diss. de Ac. Aph. p.* 46. *t.* 12. *De Cand. Prodr. v.* 2. *p.* 454. *Spreng. Syst. Veget. v.* 3. *p.* 136.

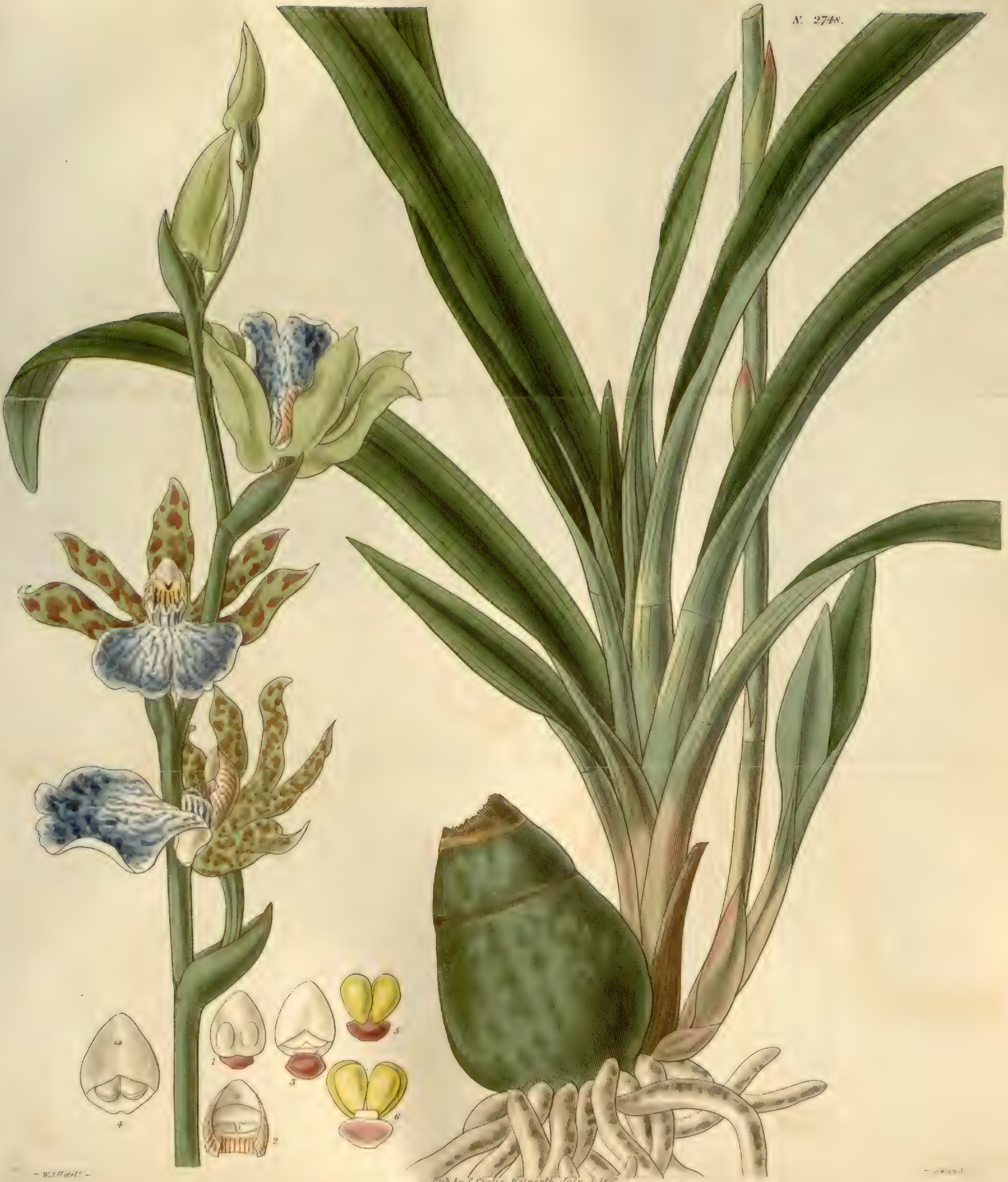
DESCR. A twiggy *shrub,* which, in our collection, has reached to the height of four or five feet, with very numerous branches, the older ones brown, the rest greenish. *Leafstalks* alternate, entirely glabrous, 2—4 inches long, linear-spathulate, slightly falcate, much attenuated at the base, the extremity obtuse, furnished with a short oblique mucro: the margins every where entire, the surface three-nerved, the two lateral nerves the most obsolete, all connected by lesser oblique nerves or veins. *Spikes* of flowers an inch or more long, one, or frequently two from the axils of the leaves. *Calyx* very short and small, four-toothed, yellowish-green, subtended by a minute bractea. *Corolla* deeply four-cleft (or of four equal, ovate petals united at the base) yellow. *Stamens* very numerous, united at the base. *Filaments* very delicate, flexuose, longer than the corolla, pale yellow: *Anthers* small, roundish, deep yellow.

Pistil often present in the same flower with the stamens. *Germen* ovate, pubescent. *Style* long, curved, filiform, glabrous, as well as the simple *style*.

ACACIA *mucronata* appears to have been first described by WILLDENOW in his Enumeratio: and WENDLAND has given a good figure of it in his useful Commentatio de Acaciis Aphyllis.

Our plant, in the Glasgow Royal Botanic Garden, was raised from seeds, sent some years ago to Mr. MURRAY, by Mr. FRASER, from New Holland. It flowers during the early Spring months.

Fig. 1. Calyx and Corolla. 2. Stamens. 3. Pistil. 4. Leaf.—More or less *magnified*.



W.J.H. del.

Pub by S. Curtis, Walworth, July. 1. 1827.

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ZYGOPETALON MACKAII. MR. MACKAY'S ZYGOPETALON.

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Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ. Div. IV. Anthera terminalis mobilis decidua; Massæ pollinis demum cereaceæ. *Br.*)

Generic Character.

Petala æqualia, subsecunda, erecto-patentia, basi connata. *Labellum* explanatum apice emarginatum, disco tuberculo magno; basi inferiore obtuse calcarato; *Columna* aptera. *Anthera* ovata, compressa, calceiforme, disco subtus affixa: loculis duobus subbivalvibus. *Massæ pollinis* duæ, ad basin inæqualiter bilobæ, basi glandulosæ.

Specific Character.

ZYGOPETALON *Mackaii.*

DESCR. Parasitic. *Root* large, fleshy, tortuose, rarely branched. *Bulb* large, ovate, wrinkled, marked with the scars of the old leaves. *Leaves* distichous, linear-lanceolate, sheathing, and subequitant at the base, submembranous, slightly carinated, striated, a foot long. *Scape* a foot and a half long, compressed, having distant sheathing scales. *Flowers* five or six, very large, handsome, emerging from cymbiform *bracteæ,* which are nearly as long as the germens. *Petals* dingy yellow-green, with blotches of a purplish colour, which are obscure on the outside, lanceolate, acute, erecto-patent, subsecund, all united for some way up from the base. *Lip* wholly uncovered by the petals, very large, standing out horizontally, rounded, waved, emarginate at the extremity, white marked, with lines and spots of purplish blue: on the disc, and applied to the column, is a large a large convex, somewhat, horse-shoe shaped, fleshy *tubercle;* and the base itself, articulated upon the base of the column, runs down into an obtuse whitish spur. *Column* semiterete, about half as long as the petals, yellow-green, marked with lines and spots of purple. *Stigma* convex. *Anther* terminal, ovate, yellowish-white, remarkably compressed, almost exactly slipper-shaped, and fixed by a minute point, near the centre of the disc below, within two celled, cells sub-two-valved. *Pollen masses,* two, large, yellow, with each of them a small lobe or pollen mass behind ; so that they might be said to be four ; and these fixed to a large reddish gland. *Germen* linear, clavate, green, not twisted.

This was received in February, 1827, along with the Fragrant PLEUROTHALLIS, given in the preceding number, from Mr. MACKAY, of the Dublin College Botanic Garden, and was by him imported from Brazil. It is a plant of great beauty, and may be numbered amongst the most shewy of the highly interesting family of Orchideous plants.

It is so unlike in the structure of its flower to any described plant, that I have no hesitation, in constituting of it a new genus. Besides the union of the five petals at the base (whence I have derived the generic appellation), the *Anther* will be found to be of a curious structure. Even when viewed from the under side, the pollen masses are concealed partly by the peculiar form of the *Anther-case* itself, and partly by the singular nature of the cells.

The noble specimen here figured was cultivated in the stove, in peat earth.

Fig. 1. Back view of an Anther removed from the top of the column at f. 2. 3. Under side of the Anther, including the Pollen Masses. 4. Ditto from which the Pollen Masses are removed. 5. Back view of the Pollen Masses. 6. Under side of ditto.—*All magnified.*

N. 2749.
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— W.J.H. delt. —

Pub. by S. Curtis Walworth July. 1.1827.

— Swan sc. —

(2749, 2750)

CARYOPHYLLUS AROMATICUS. CLOVE SPICE.

Class and Order.

ICOSANDRIA MONOGYNIA.

(Nat. Ord.—MYRTACEÆ.)

Generic Character.

Cal. 4-partitus superus, persistens. *Pet.* 4. *Germen* oblongo-cylindraceum, biloculare, ovulis plurimis. *Stylus* subulatus, glandula elevata quadrangulari cinctus. *Bacca* elliptica, (abortione) monosperma. *Cotyledones* crassæ.

Specific Name and Synonyms.

CARYOPHYLLUS *aromaticus*.
CARYOPHYLLUS aromaticus. *Linn. Sp. Pl. p.* 735. *Gært. de Fruct. v.* 1. *p.* 167. *t.* 33. *Lam. Dict. v.* 2. *p.* 718. *Illustr. t.* 417. *Smith in Rees Cycl. Pers. Syn. Pl. v.* 2. *p.* 30.
ENGENIA caryophyllata. "*Thunb. Diss. de Caryoph. arom. p.* 1." *Willd. Sp. Pl. v.* 2. *p.* 965. *Ait. Hort. Kew. ed.* 2. *v.* 3. *p.* 188.
MYRTUS Caryophyllus. *Spreng. Syst. Veget. v.* 2. *p.* 485.
CARYOPHYLLUM. *Rumph. Herb. Amb. v.* 2. *p.* 1. *t.* 1. 2. 3.
CARYOPHYLLUS aromaticus, &c. *Clusius Exot. p.* 15. *et Ic. p.* 16. *Pluk. Alm. p.* 88. *t.* 155. *f.* 1.
LE GEROFLE. *Sonnerat Voy. á la Nouv. Guin. p.* 196. *t.* 119.
LE FAUX GEROFLE. *Sonnerat Voy. á la Nouv. Guin. p.* 197. *t.* 120.

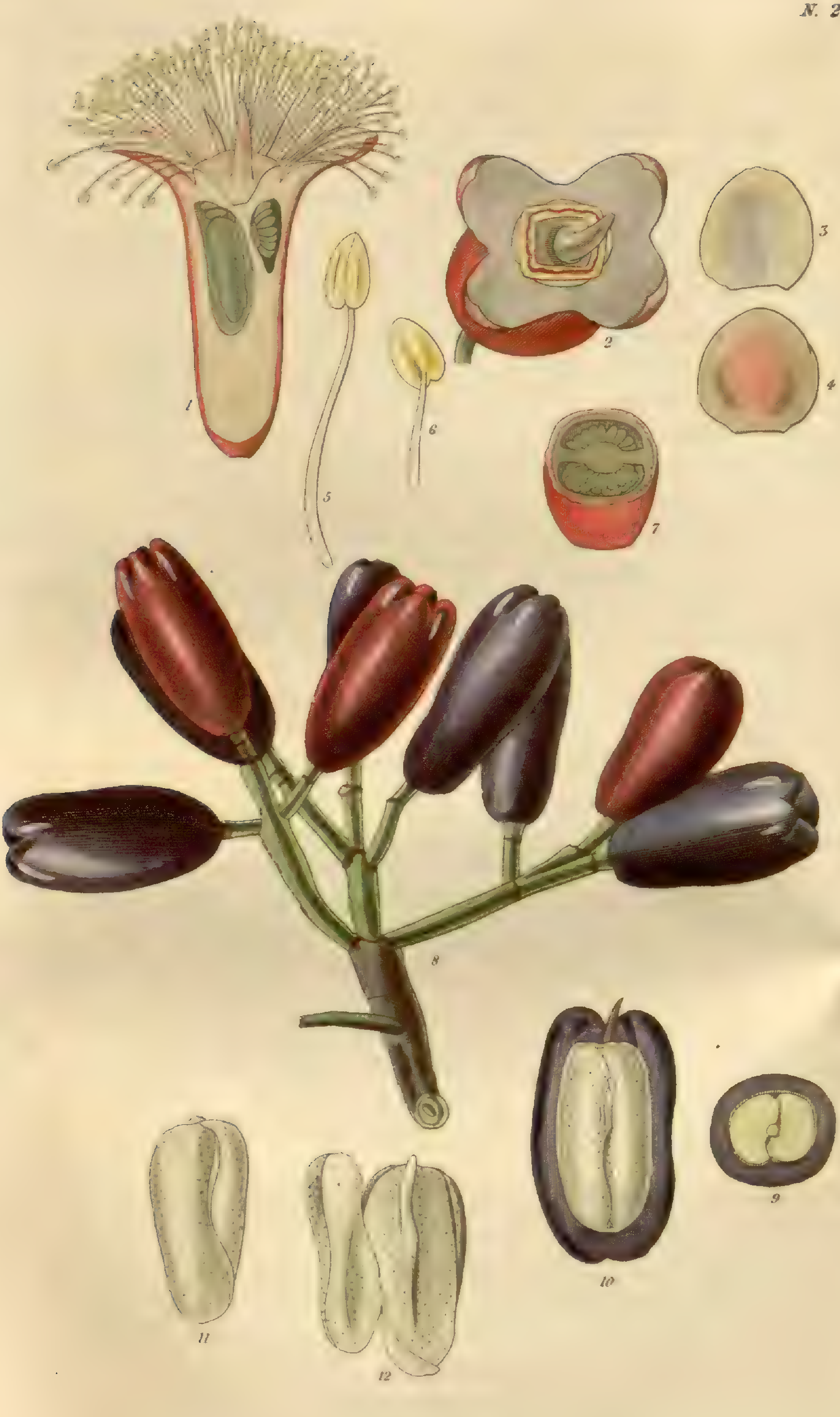
DESCR. A moderately sized *Tree,* whose outline or circumscription is somewhat conical or pyramidal, bearing numerous opposite branches which are more or less virgate. Whole plant every where glabrous. *Leaves* opposite and decussate, persistent, somewhat coriaceous and shining, minutely punctated, about four inches long, ovato-lanceolate,

late, more or less acute, quite entire, pale beneath, tapering gradually at the base into a slender *footstalk*, which is almost two inches long. *Panicles* short, terminal, of many flowers, and always trichotomously divided, jointed at every division. *Peduncles* terete, green. *Calyx* of four ovate, concave segments, erecto-patent, placed upon the top of the germen, and together with it, is first green and then red, coriaceous. *Petals* four, larger than the calyx, imbricated into a globe in bud, at length spreading, roundish, concave, yellowish-red, very soon caducous. In the centre of the calyx, and occupying the top of the germen, is a quadrangular elevated line or gland, surrounding, but not embracing the base of the shortish, obtusely subulate *Style*. Around this gland, immediately within the petals, the *Stamens* are inserted; but, as their insertion does not extend to the angles of the gland, they appear to be collected into four bundles, numerous. *Filaments* much longer than the petals, yellow. *Anthers* ovato-cordate, yellow, two-celled. *Germen* oblong, or almost cylindrical, having, in the upper part, two-celled, with many small ovules in each cell, attached to the sides of the dissepiment. All these become abortive; or *one* proves fertile, and by its great enlargement, destroys the appearance of the rest of the ovules, and of the second cell; so that the fruit which forms a rather large elliptical purple *berry* is only one-seeded: this is of the same shape as the berry; its integument thin, and of a soft texture. *Embryo* likewise elliptical, large, greenish, fleshy, dotted. *Cotyledons* unequal, sinuose; the larger one partly enveloping the smaller, including the superior *radicle*.

Almost every part of the plant is covered with minute dots or glands, which contain the essential oil, that gives the aromatic odour to it. These abound, particularly in the interior of the subtance of the germen, near the epidermis.

The *Clove* was introduced into the Royal Gardens at Kew, in 1797, by the Right Honourable Sir JOSEPH BANKS. Its native country is the Molluccas; but from its value as a spice, its cultivation has extended to the West, as well as to the East Indies; and we must endeavour to lay before our readers some details respecting a plant, of *such* importance, that it was once the *staple* commodity of some of the East India Islands, particularly Amboyna.

It is not easy to determine when the *Clove* was first known to Europeans. J. BAUHIN tells us, that the inhabitants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Pub. by S. Curtis, Walworth July. 1. 1827

tants of the Molluccas were scarcely acquainted with its value, till some Chinese vessels visited their country, and transported many plants into China, and that they were thus the means of distributing them into other districts of India, into Persia, and Arabia. Sir JAMES SMITH (in REES's Cyclopedia) suspects, that it was brought into Greece from Arabia, and that the first distinct mention of it is made by PAULUS ŒGINETA, a Greek physician of the seventh century, when it was used in food and in medicine; and the same author supposes it was the CARUNFEL of SERAPION, and the CHARUMFEL *bellum* of AVICENNA, two Arabian physicians. The Molucca Isles were discovered by the Portuguese in 1511; and from that time, or very soon after, it may be imagined, the Cloves came into common use in Europe. But the Dutch, after driving the Portuguese from the Spice Islands, strove to take the monopoly of all the spices into their own hands; and, for this purpose, after vainly endeavouring to destroy the Cloves in the neighbouring islands, they concentrated their cultivation in Amboyna and a few smaller islands in the vicinity, where, indeed, they had been introduced, even before the conquest of the Portuguese, by the Cerammers of Cambello, who brought some *mother-cloves (seed)* secretly in hollow bamboos from Machian. The conduct of the Dutch, in all that concerns their trade in the East Indies, has fixed an indelible disgrace upon their country. When the natives of Cambello shewed their conquerors, the Dutch, the trees of *Cloves* they had cultivated secretly for so many years, behind the hill of Massili, they were rewarded for their openness by the destruction of all their Clove trees, and the deprivation of the fruits of their industry and exertion. And when the natives came to make reprisals, by attacking the forts of the Dutch, such enmity, on their part, is called by their European tyrants, a wicked spirit of disobedience, and an unjust and cruel lust of blood and warfare: so that their great historian VALENTYN has said, "it would have been better, if, instead of extirpating their trees alone, we had, at the same time, exterminated this revengeful and sanguinary nation*."

A military Officer, a civil servant belonging to the Dutch, with European attendants, and twenty or thirty Buggness soldiers, are sent to the other islands annually, with axes, to destroy the Clove trees: thus, as the Abbé Raynal observes, maintaining a perpetual struggle with the liberality of nature. In the Molucca Islands, having subdued the princes by force of arms, they made conditions with them, principally with reference to the Clove trade; compelling them, at first, not to sell any of the Cloves, produced in their respective dominions, to any other nation, and afterwards to destroy all the Clove trees which grew in their territories, for which they were to receive indemnity in money. Thus did they, for a time, keep exclusive possession of this trade, and were enabled, at pleasure, to raise and lower the price; committing to the flames such overstock spice, as they could not sell on their own terms.

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* See STAVORINUS's Travels for a most valuable account of the Dutch trade and possessions in the East Indies.

They also reduced the quantity of bearing trees in their own possession, to five hundred thousand Cloves; which yield, upon the average, at least a million of pounds per annum. One of the largest sales ever made in Holland, was (in 1714) 435,427 lbs.; but in, 1758, 200,000 ℔s., in 1778, 234,271 ℔s., and in 1738, 400,000 ℔s.; whilst in the Indies, about 150,000 lbs. or 200,000 lbs. according to the English Editor of Stavorinus's travels, were disposed of; so that a great superfluity must still always have remained in the hands of the monopolizers.

A better state of things now exists, and the Clove is cultivated wherever human industry has carried it to a suitable soil and climate; and numerous other countries possess this precious vegetable. The French introduced it to their islands of Mauritius and Bourbon, through the medium of M. Poivre their intendant of those islands, who sent two vessels in 1769, to the kings of Gueby and Patany, to procure the Clove and other valuable spices; and they have been found to succeed so well, that in the year 1802, when Mr. Bory de St. Vincent was in the Mauritius, he visited the individual tree which was first planted by the philanthropist Poivre; saw it loaded with Cloves; and ascertained that it had, in some years, alone produced the extraordinary quantity of 125 lbs. of this spice: whereas, the average produce in Amboyna, is 2 or 2½ lbs. per annum. It requires five thousand Cloves to weigh a pound; consequently, here were 625,000 flowers upon this single tree (independent of others, which were, perhaps, left for seed); "a fact," says Bory de St. Vincent, " which would appear incredible, were we not to mention, that this beautiful tree is at least forty feet high, throwing out innumerable branches, some of which, falling down on all sides, form a pyramid of verdure". In 1791, M. HUBERT, the proprietor of the original Spice estate, of the former intendant, M. POIVRE, gave a *fête champêtre* there in honour of the extended cultivation of the spice trees; whilst the festivals, annually held by the Dutch in Amboyna, were instituted in commemoration of their destruction in all the surrounding islands.

Another French gentleman, M. CÉRÉ, sent plants from the Mauritius to Cayenne, about the year 1779; and, in 1792, the plantations there contained 2500 trees, which bore Cloves equal to those of the East Indies, and which fetched a higher price in France, than those from the Moluccas. Others were sent to Martinique, and the French West India Islands; so that the former furnished the London market, in 1797, with 350 lbs., and in the following year with 200 lbs.; at which time St. Kitts sent 2981 lbs.

From Martinique, the Clove tree was introduced to our Island of St. Vincent; and by the great care and attention of Dr. ANDERSON, the superintendent of the Botanic Garden, it is brought to perfection*. " About April," says Mr. GUILDING, in his notes which accompanied his beautiful drawings of this plant, "the tree is covered with its lovely blossoms, the greater part of which, prove abortive, and falling to the ground, are collected, and dried for sale. The Berries which remain on the tree, gradually enlarge their calyx and develop the seed, and are gathered under the trees about July, having turned to a blackish purple, and lost all their value as a spice. The seeds require to be set out immediately and planted near the surface, as they vegetate rapidly. The young plants are tender, and should be placed if possible, where it is intended they should remain. The *Clove* was once cultivated to a great extent in Dominique: in our own island, the trees which are little valued, produce annually upwards of a million of seed, besides the abortive fruit, which is dried as a spice. The colonists, supposing from our overgrown trade in India, that it can never become an article of commerce, neglect even to plant the Clove in their hedges; although it, as well as the Cinnamon and many other plants, which any overwhelming change in our Eastern possessions might render invaluable, would grow without any expence."

In

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[*] See the history of its introduction, and of its culture, by Dr. ANDERSON, in the Rev. LANSDOWN GUILDING's " account of the Botanic Garden in the Island of St Vincent."

In Trinidad too, the Clove is extensively cultivated; and it cannot be doubted, but that with the present enlightened and truly scientific governor, Sir Ralph Woodford, it will there, if it can in any of our West India possessions, be rendered a profitable article of commerce. I have received from a French gentleman of that island, M. Begarret, several of the Berries or Matrices (*mother cloves*) as they are called, for our Botanic Garden; but, as has just been observed by Mr. Guilding, they must be planted as soon as gathered, or the essential oil escapes, which, perhaps, nourishes the Embryo, and its vegetative property is destroyed.

The Clove of merchandize is the unexpanded flower; the corolla forming a ball or sphere on the top, between the teeth of the calyx; thus, with the narrow base or germen tapering downwards, giving the appearance of a *nail;* a similarity, indeed, much more striking in the dry, than in the fresh state of the bud. Hence, as Sir James informs us, "the Dutch call it *Naghel;* the Spaniards, *Clavo;* the Italians, *Chiodo;* and the French, *Clou*, from which the English *Clove* is evidently derived." The uses of Cloves are sufficiently known, particularly in domestic economy, as a seasoning in various dishes, and to give flavor to wines and spirits. In medicine, they are esteemed tonic and exhilirating, powerfully stimulating on the muscular fibres, but dangerous to bilious persons, and those of a sanguine temperament. These properties, their acrid and burning taste, depend on the essential oil, which is procured by distillation, and is hot and caustic, and therefore employed in the curing of the tooth ache and other maladies, and by perfumers.

The Cloves are gathered by the hand; or beaten with reeds, so as to fall upon cloths placed under the tree; and dried by fire, or, what is better, in the Sun. The fully-formed Berries are preserved in sugar, and eaten after dinner to promote digestion.

Tab. 2740, A. Flowering Branch of Caryophyllus *aromaticus.*

Tab. 2750, B. f. 1. Vertical Section of a Flower. 2. Front view of the top of the Germen, seen within the Calyx. 3. Inner view of a Petal. 4. Outer view of ditto. 5, Front view, and 6, Back view of a Stamen. 7. Section, of the Germen, *magnified.* 8. Cluster of Fruits, *natural size.* 9. Section of a Berry, made transversely above the middle. 10. Vertical Section. 11. The Embryo. 12. Embryo, with the Cotyledons laid open.—*Magnified.*

N. 2751.
A.

– W.J.H. del. –

Pub. by S. Curtis, Walworth, July 1, 1827.

– Swan sc. –

TELFAIRIA PEDATA. PEDATE TELFAIRIA.

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Class and Order.

DIÆCIA PENTANDRIA.

(Nat. Ord.—CUCURBITACEÆ. *Juss.* NHANDIROBEÆ. *Aug. St. Hil.*)

Generic Character.

TELFAIRIA. *Hook.* MASC. *Cal.* campanulatus, profunde quinquefidus. *Petala* 5, fimbriata. *Stam.* 5, lobis antheræ distinctis.

FŒM. *Cal.* superus, minimus, 5-dentatus. *Petala* 5, fimbriata. *Germen* cylindraceum sulcatum. *Stylus* brevis. *Stigma* quinquelobum. Fructus: *Bacca* maxima oblonga, profunde sulcata, quinque—6-locularis, loculis pulpo repletis. *Semina* magna orbiculari-compressa tuberculata, tunica coriacea, e vasis reticulatis, tecta, seriatim disposita, horizontalia.

Specific Name and Synonyms.

TELFAIRIA *pedata.*
FEUILLÆA pedata. *Smith in Botanical Magazine, Old Series. t.* 2681. (fœm.)
JOLIFFEA africana. *Bojer MSS.*

DESCR. After the excellent figure and description of the female of this plant, given in a former number of the present work, I need only confine myself to an account of the Male flowers and of the fruit, in order to render our description complete, of this highly interesting vegetable; and this I am able to do, from having received from Mr. TELFAIR, dried specimens of the flower; a fully formed, but scarcely ripe fruit, in spirits; several ripe seeds; and a beautiful series of drawings, from the pencil of Mrs. TELFAIR. These drawings were all made in 1826, from plants, cultivated at Bois Chery, one of Mr. TELFAIR's estates in the Mauritius.

The female flowers are produced solitary, as figured and described, at t. 2681. The male, on the other hand, produces, upon an axillary peduncle (between the point of insertion of the lateral tendril and the leaf,) of six or eight inches in length, a receme of six or eight large flowers, each upon a pedicle, often bracteated, an inch or more long. Here, too, the *Calyx* is large, campanulate, downy, nerved, cut into five deep ovate or ovato-lanceolate, very deeply inciso-serrate segments, almost half as long as the flower. *Corolla* of five petals, very similar, as far as I can judge from the dried specimens, and from the drawing, to those of the female. *Stamens* five, and (apparently) distinct; but I am not able to determine clearly that point, nor that of their exact insertion. *Filaments* cuneate, tapering downwards; the broad upper part separates the two linear oblong cells of the anther, which open with a longitudinal fissure, and, as well as the pollen, are yellow.

The fruit constitutes an enormous *Berry* or *Pepo*, from one and a half, to three feet in length, and often eight inches across, oblong, always green, having from ten to twelve deep furrows, the prominences rounded, the bottoms of the furrows rough, with minute elevated points, as is the concave part where the stalk is inserted: the apex is acute, or shortly acuminated, and near the base is a contraction; so that the very base forms a dilated, furrowed apophysis. There are five cells, each cell filled with a dense fleshy pulp, in which the seeds are imbedded horizontally in a longitudinal series. Each seed is the size of that of a very large kidney bean, between orbicular and cordate, much compressed, even a little concave on one side, and firmly enclosed in a beautiful, yellowish-brown, but tough and almost coriaceous, reticulated mass of vessels quite distinct from the *seed* itself, whose *integument* is hard and thick, yellow-brown, on both sides marked near the margin with an elevated line, and in the disc, or centre, it is prettily embossed with many serpentine lines. Although the outside of this be brownish, the inside (or that next the almond) is a deep and almost bright yellow; and the intermediate part is a fine black. The whole internal cavity is occupied by the Embryo, except a thin membranaceous, brownish covering, adhering to it, which, perhaps, may be considered as Albumen. *Cotyledons* two, of the same shape as the seed, pure white, fleshy, and rather oily. *Radicle* inferior, small, conical.

The genus FEUILLÆA of LINNÆUS, was instituted by PLUMIER

N. 2752.
B.

W. H. de

Pub. by S. Curtis, Walwort [illegible]

PLUMIER, under the name of NHANDIROBA, and figured by the latter author, but in so imperfect a manner, that, with the incomplete materials of our plant, possessed by Sir JAMES SMITH, it is not surprising he should have referred it to FEUILLÆA. A much more satisfactory representation of a FEUILLÆA, and probably too, the very same species as the F. *cordifolia* of LINN. (and PLUM. Ic. t. 209.) is given in the " Nouveau Dict. d'Hist. Nat."; and now, being in possession of the male, as well as female flowers, and the perfect fruit, I have no hesitation in pronouncing it quite distinct from FEUILLÆA, as well as from every other of the family, to which it belongs; and it is no less my own wish, than that of Mr. BARCLAY, that it should bear the name of our mutual and excellent friend, through whose means it has been introduced to this country, CHARLES TELFAIR, Esq. of the Mauritius.

I need only give the generic character of FEUILLÆA, as laid down in the Nouv. Dict. v. 16. p. 500, to shew how the two genera differ. Flowers diœcious: MALE, with a campanulate calyx, 5-cleft, monopetalous, rotate, five-lobed corolla, closed with a double star, five fertile stamens, and as many sterile ones: FEMALE, *Cal.* and *Cor.* as in the male. *Germen* half inferior, surmounted by five styles, and as many stigmas. *Fruit,* a large, spherical, three-celled, many-seeded *Berry,* envelloped in a hard bark. Both the ovules and the seeds are erect, and all the species are natives of South America.

The first information I had of this present plant was from Mr. TELFAIR, who sent me, in the latter end of the year 1825, a sketch of the fruit with the following note. " I most earnestly hope, that Bury Hill will have the honour of flowering the seed I have sent, of an extraordinary climbing plant, which is hitherto nameless. It was brought here (to the Mauritius) from Pemba, near the shores of Zanzibar, on the eastern coast of Africa, by Mr. BOJER, and is diœcious. The fruit is three feet long, and eight or ten inches in diameter, full of seeds as large as Chesnuts (two hundred and sixty-four in one fruit) which are as excellent as almonds, and have a very agreeable flavour; and when pressed, they yield an abundance of oil, equal to that of the finest Olives. It is a perennial plant, and grows at the margins of the forests; enveloping the trees with its branches; while its trunk is frequently seen with a circumference of eighteen inches. I have distributed the seeds over this island and Bourbon, and have sent some to New

Holland, and even to Otaheite and New Zealand, to the Missionaries. Mr. Bojer has made a sketch of the fruit which I have attached to this letter. The seeds that I planted here, have produced stems which are thirty feet high, and they were put into the ground at the same time I sent the first seeds to Mr. Barclay."

Mr. Barclay's plants flowered, as well as Mr. Telfair's, in 1826; and one of them has flourished to such a degree, that, by this time, it would more than have filled a large stove at Bury Hill, were not the pruning knife constantly employed. A plant, therefore, so easy of cultivation, must soon become common in climates, that are at all favorable to its growth: and, thus will Mr. Telfair have the honour of giving a most useful vegetable to mankind at large, as well as a name to a new and very beautiful plant*.

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* Since the above was printed, and too late to be inserted, M. Bojer has obligingly sent to me an ample description, which he made, of this plant, from the living plant at Zanzibar: this goes to confirm the opinion, of the plant constituting a new genus, which he himself has called Joliffea *africana*, in his own MSS. I trust he will still further concur with us in dedicating it to his patron and friend, Mr. Telfair. Its name among the Indians of Zanzibar is Koumé.

Tab. 2751. A. f. 1. Raceme of Male Flowers, *natural size*. 2. A Fruit, greatly reduced.

Tab. 2752, B. f. 1. Transverse Section of the Fruit. 2. Longitudinal Section of ditto, much reduced. 3. Seed with its vascular envelope. 4. Seed deprived of its envelope. 5. Section to shew the different colours of the Integument and the Cotyledons, Embryo, and Radicle. 6. Embryo taken from the Seed, and with its immediate membranous covering removed.—*Natural size*.

N. 2753.

— W.J.H. delt. — Pub by S. Curtis, Walworth July. 1. 1827. — Swan sc —

SIDA PULCHELLA. DELICATE WHITE-FLOWERED SIDA.

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Class and Order.

MONADELPHIA POLYANDRIA.

(Nat. Ord.—MALVACEA. *D. C.*)

Generic Character.

Calyx nudus, 5-fidus, sæpe angulatus. *Stylus* apice multifidus. *Capsulæ* 5—30 circa axim verticillata, plus minusve inter se coalitæ, 1-loculares, mono aut polyspermæ, apice muticæ aut aristatæ. *D. C.*

Specific Character and Synonyms.

SIDA *pulchella;* toto pubescenti-stellata, foliis cordatis ovato-lanceolatis grosse inæqualiter crenatis subtus tomentosis, racemis axillaribus paucifloris petiolo brevioribus (longioribus. *D. C.*), capsulis 5 (biaristatis. *D. C.*).
SIDA pulchella. "*Bonpl. Nav. t. 2.*" *Willd. Enum. p.* 724. *De. Cand. Prodr. v.* 1. *p.* 468.
SIDA ramosa. *Spreng. Syst. Veget. v. 3. p.* 115?

DESCR. *Shrubby,* three to four feet high, branched; the *branches* rounded, the older ones glabrous, the rest, and, indeed, almost the entire plant clothed with densely stellated pubescence *. *Leaves* rather remote, three to four inches long, deeply cordate at the base, ovato-lanceolate, doubly and coarsely crenate at the margin, many nerved, dark-green above, paler and almost tomentose beneath, especially in the older leaves. *Petioles* terete, slender, an inch and a

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* I have known the stems and leaves to become quite glabrous, when the plant has been cultivated in the open border.

half to two inches long, having two linear or almost setaceous *stipules* at the base. *Racemes* few flowered, from two to three on a peduncle, having one or two rather large stellato-pubescent *bracteæ,* and a smaller glabrous one at the base of each pedicel. *Calyx* (as well as the peduncle and pedicels) glabrous, smooth, subcampanulate, quinquefid, the segments subulate, erecto-patent. *Petals* five, pure white, ovato-lanceolate, somewhat unguiculate, and united by the marginal hairs of these claws, as well as by the base of the cylindrical column or tube of the stamens : this tube separates into many short branching filaments, each branch bearing a yellow, kidney-shaped, one-celled *Anther*. *Germen* of five angles, small, roundish, tipped with five short, filiform *styles,* much shorter than the staminal tube.

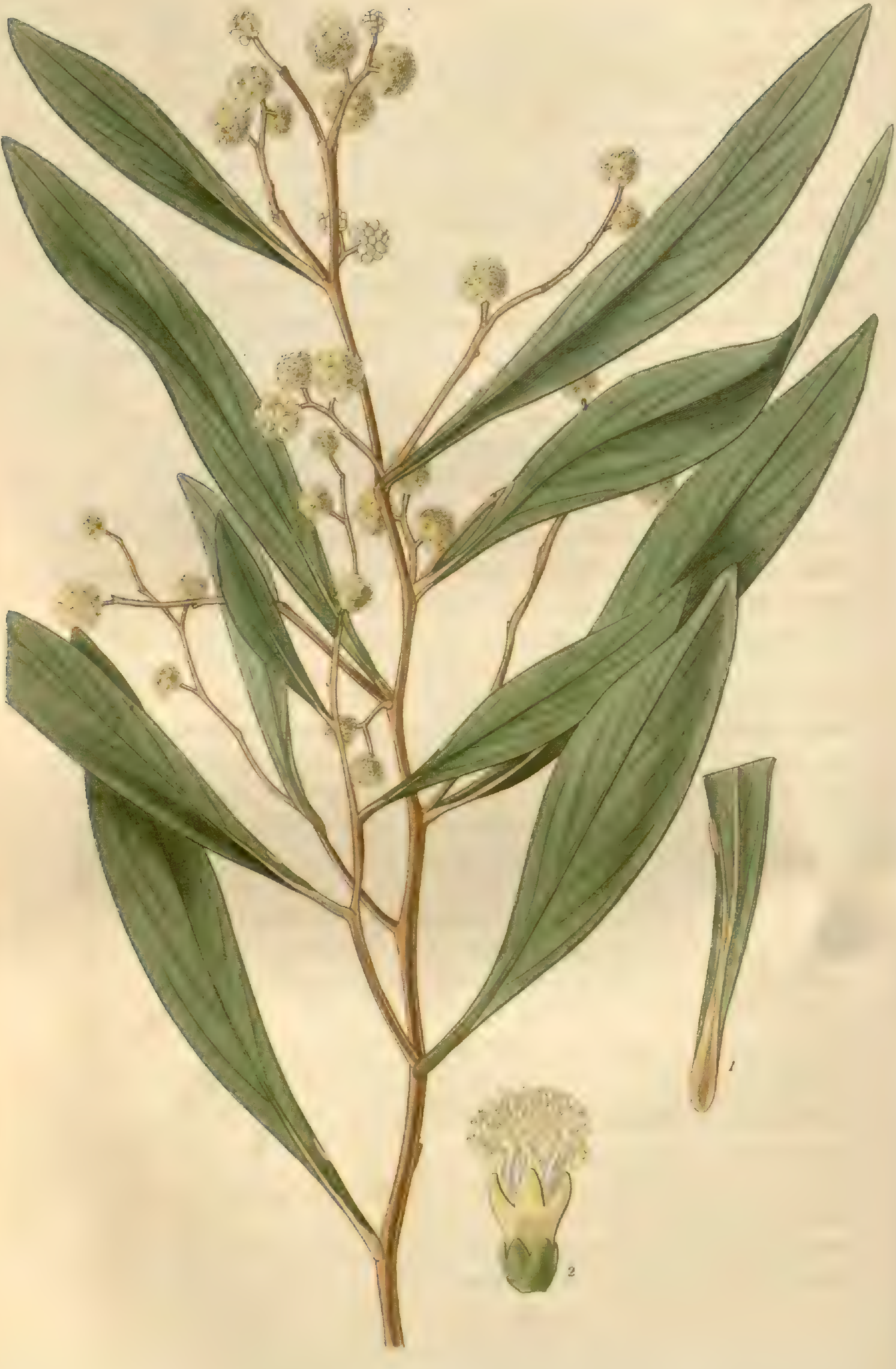
Seeds of this singular species of SIDA were received by Mr. MURRAY, at the Glasgow Botanic Garden, both from Mr. FRASER, at New Holland, and from a correspondent in Van Dieman's Island. Plants of it were placed in a sheltered situation in the open air, and have survived two winters, one of which has been very severe. The flowers, however, were produced in the greenhouse, in the month of March.

I have not the opportunity of consulting BONPLAND's plants of the garden of Malmaison, where the present species is figured ; and, although DE CANDOLLE's character accords in most of the essential particulars ; yet it must be allowed, that it differs in the relative length of the raceme with the petiole; which, however, may be a variable circumstance, and, I suspect, too, in the biaristate capsules: for, although I have no ripe capsules to examine, by which I might set the matter at rest ; yet, I think, if present in the capsule, the aristæ would be apparent in the state of the germen.

SPRENGEL unites the S. *pulchella* of WILLD. with the S. *ramosa* of CAVANILLES, and says it is a native of Peru ; whilst DE CANDOLLE gives Senegal as the native country of S. *ramosa.*

Fig. 1. Portion of a Raceme. 2. Portion of the Stamens. 3. Flower cut open to shew the structure of the Corolla, the tube of the Stamens, and the Pistil.—More or less *magnified.*

N. 2754.



W.J.H del.

Pub by S Curtis, Walworth. July. 1. 1827.

ACACIA PENNINERVIS. FEATHER-NERVED ACACIA.

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Class and Order.

POLYGAMIA MONŒCIA.

(Nat. Ord.—LEGUMINOSÆ.)

Generic Character.

Flores polygami. *Cal.* 4—5 dentatus. *Petala* 4—5, nunc libera, nunc in corollam 4—5 fidam coalita. *Stam.* numero varia 10—200. *Legumen* continuum. *D. C.*

Specific Character and Synonyms.

ACACIA *penninervis;* glabra petiolis lanceolatis magis minusve acutis basi attenuatis subcurvatis marginatis uninerviis venis obliquis parallelis margine antice prope basi uniglandulosis, capitulis globosis in racemis terminalibus axillaribusque, calyci corollaque quinquefidis.

ACACIA penninervis. *Sieber Fl. Nov. Holl. n.* 458. *De Cand. Prod. v.* 2. *p.* 452. *Spreng. Syst. Veget. v.* 3. *p.* 135.

ACACIÆ impressa. *Hort.*

DESCR. A *shrub,* attaining in our gardens, the height of five or six feet, having numerous regular, brown, twiggy *branches,* which, as well as the whole plant, are quite glabrous. *Leafstalks* three to four inches long, coriaceous, lanceolate, six to seven lines broad, more or less acute at the point, much attenuated at the base, straight or slightly falcate, having a somewhat thickened margin, and, on the upper margin, near the base, an oblong *gland.* There is a single *rib* or nerve not running through the centre, but nearer the upper margin, and from this diverge several oblique, not

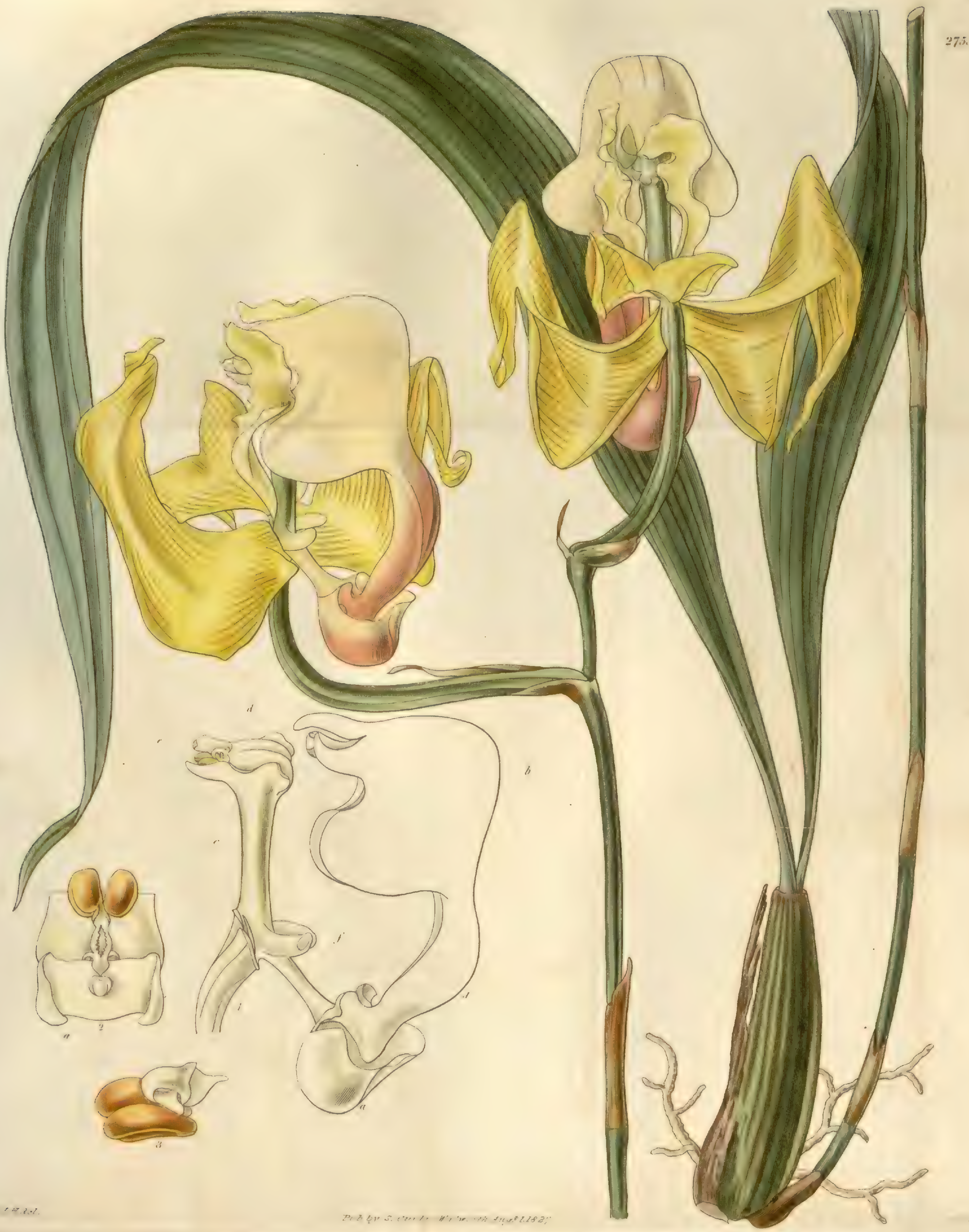
very distinct, parallel *veins;* a more conspicuous one connects the gland with the central nerve. The colour is a yellow-green, but clothed with a slightly glaucous tint. The *flowers* are arranged in perfectly globular *capituli,* of a delicate yellow colour, and about the size of large peas, and these are racemose; the *peduncles* shorter than the leaves, terminal and axillary; when axillary, they are either solitary or two together, with one shorter than the other, but both shorter than the leafstalks. Each has from four to six or eight heads of flowers. *Calyx* five-toothed, cup-shaped, and brown. *Corolla* quinquefid, pale yellow, as are the numerous stamens.

Much difficulty attends the investigation of the leafless New Holland species of ACACIA, or the tribe of PHYLLODINEÆ, as DE CANDOLLE calls them; and we must proceed with caution in determining the species, which, from time to time, flower in our greenhouses. The present plant exists in the Botanic Gardens of Edinburgh and Glasgow, and may, probably, be common in other collections, having been received under the unpublished name of A. *impressa.* It is, however, unquestionably, the A. *penninervis* of SIEBER: a name sufficiently appropriate, considering, that the species, with which it is liable, at first sight, to be confounded, is the A. *melanoxylon*; but, which is, nevertheless, essentially distinguished by its many parallel nerves. It is, indeed, perhaps, still more nearly allied to A. *falcata,* which may likewise be called penninerved, but the racemes of *capituli* are much shorter, and the leafstalks are destitute of a gland.

We possess several other species which will come into the same natural group with the present, and are equally furnished with a gland on the margin of the leaf; some with two. In every instance there is an oblique nerve or vein, which connects it with the principal nerve.

Fig. 1. Lower portion of a leafstalk, to shew the thickened margin and the gland. 2. A single flower.—*Magnified.*

2755.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W. J. H. del.

Pub. by S. Curtis Walworth Aug.t 1. 1827

Coryanthes sp.

(2755)

GONGORA SPECIOSA. LARGE YELLOW-FLOWERED GONGORA.

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Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ.)

Generic Character.

Petala 3 exteriora patentissima subuniformia, 2 *interiora* minora. *Columna* elongata. *Labellum* pedicellatum, varie appendiculatum. *Massæ* pollinis 2, pedicellatæ.

Specific Name.

GONGORA *speciosa;* petalis approximatis, labello saccato, appendice magna pedunculata galeata, columna basi bidentata.

DESCR. Parasitic. *Roots* whitish, flexuose, branched. *Stem* an oblong, deeply striated, green *bulb,* broadest towards the base, terminated by two linear-lanceolate, at both ends very much tapering, strongly striated and subplicated *leaves. Scape* radical, a foot, or a foot and a half long, erect, compressed, jointed, with brown sheathing scales at the joints, and bearing two (or more?) powerfully, but not agreeably scented *flowers* at the extremity, of a very large size, and so curious in structure, that I should fail to make myself understood without the aid of the figures. The three outer *petals* are remarkably spreading and reflected, and folded back at their margins, so that it is difficult to trace the true form of them. They are, however, ovate, or ovato-lanceolate, the upper one two, the *lateral* ones three inches in length, of a thin membranaceous texture, longitudinally striated, and of a gamboge yellow colour. The two *inner* ones stand almost upright, but are waved, and somewhat twisted, yellow, linear-oblong, destitute of striæ. All these are inserted at the base of the column. Lip (f. 1. *A.*) pedunculated : *peduncle* an inch long, cylindrical, almost white, deflexed. The lip itself is formed of two portions : at the base is a deep orange, satiny, large *cup* or *sack* (f. 1. *a.*), from the inner and upper margin of which, there rises a *very large,* again pedunculated, helmet-shaped process, of a thick and fleshy nature, hollow within, standing erect (f. 1. *b.*), which covers, with its acuminated, trifid apex, the top of the column of fructification : its *colour* is a reddish, or tawny yellow : its *peduncle*

duncle is attached to the margin behind, is thick, semi-cylindrical, having a broad, satiny line behind, within grooved; below, it ends in a conical point, which fits into the cup. *Column* standing exactly perpendicular, almost two inches long, cylindrical, pale green, enlarged at the top, so as to resemble an inverted foot: this summit is gibbous and two-lobed, constituting the stigma (f. 1. *a.*), and on each side has an erect two-lobed membranous process, of which two of the lobes extend behind, and are acuminated and incurved (f. 1. *e.*). Within these, the anther-case appears to have been placed, but this had fallen in my specimens, although the pollen-masses remained *firmly* fixed to a slightly raised process above the stigma, which, as well as the stigma, lies horizontally. The *Pollen-Masses* two, waxy, oval, compressed, orange coloured, with a fissure on the outside margin of each, are to be separated with difficulty, and when lifted up and thrown back as at f. 2, it appears that the hollow, inflated, and membranous curved pedicel covers a white tubercle (f. 2. *a.*). The base of the column, immediately above the peduncle of the labellum, has two (one on each side), white, compressed, oblong, curved processes, at the end of which, on the outside, is apparently an opening (f. 1. *f.*), from which honey is distilled, and this drops into the cup of the lip below. *Germen* very long, cylindrical, striated, scarcely twisted, having a lanceolate bractea at its base.

There are two collections in this country that are preeminently rich in the plants of Brazil, that of Mrs. ARNOLD HARRISON, and of RICHARD HARRISON, Esq. both of Aigburgh, near Liverpool. Their connection with Rio Janeiro, and the circumstance of their having a near relative resident there, who loses no opportunity of collecting the vegetable treasures of that country for them, have been the means of their introducing to Britain some of the choicest productions now existing in our stoves. Some are already recorded in the pages of this and other Botanical works, especially individuals of the family of the parasitic ORCHIDEÆ; and, amongst the most curious of that very singular tribe will, undoubtedly, rank the subject of our present plate. It grows on trees, in large patches, on Victoria Hill, above Bahia, in Brazil, and was sent, by HENRY HARRISON, Esq. of Rio, to RICHARD HARRISON, Esq., about twelve months ago. It produced its large and fragrant blossoms in the month of May, 1827.

The cup at the base of the labellum of the present plant Mr. HARRISON's gardener observed to be rapidly filled with the honey; and Mr. SHEPHERD informs me, that some cups that were emptied in the morning, were, when he saw the plant on the same day again, half filled with the nectariferous juice.

Fig. 1. The top of the Germen, the Column, and Lip. *A.* the Lip. *a.* the Cup at the base. *b.* the Helmet. *c.* the Column. *d.* the Stigma. *e.* the membranous processes, between which are the Pollen Masses. *f.* the processes from which the Honey is distilled. 2. The part of the extremity of the Column bearing the Pollen-Masses, which are here forced back to shew the underside and the Tubercle (*a.*) which the pedicel previously covered. 3. Side view of the Pollen Masses.—*All more or less magnified.*

2756. A

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MYRISTICA OFFICINALIS. AROMATIC, or TRUE NUTMEG TREE.

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Class and Order.

DIŒCIA MONADELPHIA.

(Nat. Ord.—MYRISTICEÆ.)

Generic Character.

MASC. *Cal.* o. *Cor.* campanulata, trifida. *Filamentum* columnare. *Antheræ* 6—10, connatæ. FŒM. *Cal.* o. *Cor.* campanulata, trifida, decidua. *Stylus* nullus. *Stigmata* 2. Drupa nuce arillata, monosperma. WILLD.

Specific Character and Synonyms.

MYRISTICA *officinalis;* foliis oblongo-ellipticis subacuminatis glabris subtus palidioribus, nervis simplicibus, pedunculis paucifloris, perianthiis urceolatis.

MYRISTICA officinalis. *Linn. Suppl. p.* 265. *Gært. de Fruct. v.* 1. *p.* 194. *t.* 41. *f.* 1. *Smith in Rees Cycl. Hook. Exot. Fl. t.* 155, 156.

MYRISTICA moschata. *Thunb. in Act. Holm.* 1782. *p.* 45. *Woodv. Med. Bot. t.* 134. *Willd. Sp. Pl. v.* 4. *p.* 869. *Spreng. Syst. Veget. v.* 3. *p.* 64. *Ait. Hort. Kew. ed.* 2. *v.* 5. *p.* 419.

MYRISTICA aromatica. " *Lam. Act. Par.* 1788. *p.* 155. *t.* 5—7." *Lam. Dict. v.* 4. *p.* 385. *Lam. Ill. t.* 832. *Roxb. Pl. of Corom. v.* 3. *t.* 267.

LA MUSCADE. *Sonerat, Voy. de la Nouv. Guin. p.* 194. *t.* 116, 117, 118 *?*

NUX MYRISTICA seu PALA. *Rumph. Herb. Amb. v.* 2. *p.* 14. *t.* 4.

NUX MOSCHATA, fructu rotundo. *Pluk. Phyt. t.* 219.

DESCR. A diœcious tree; its trunk rising to the height of from twenty to twenty-five feet, clothed with a greyish-

brown, and tolerably smooth *bark,* abounding in a yellow juice, and bearing many whorls of spreading *branches.* *Leaves* from three to six inches long, subbifarious, oblong, approaching to elliptical, glabrous, rather obtuse at the base, acuminate at the extremity, quite entire at the margin, above dark-green and somewhat glossy, beneath much paler, but neither pulverulent nor downy; *nerves* parallel, simple, or only a little branched at the extremities towards the margin, prominent, and of a brownish colour beneath. *Petioles* from half to three quarters of an inch long, plane above. When bruised, the leaves are slightly aromatic.

Flowers in axillary, subumbellate *racemes,* sometimes forked or compound. *Peduncles* and *pedicels* subclavate, glabrous, the latter having a quickly deciduous, ovate *bractea* at its summit, often appressed to the flower.

Male flowers, from three to five or more on a peduncle. *Perianth* single, urceolate, not inaptly compared by RUMPHIUS to the flower of the *Lily of the Valley,* which it resembles in size and form: it is of a thick and fleshy texture, clothed with a very indistinct reddish pubescence, of a dingy pale yellowish colour, cut into three, rarely, and perhaps, the effect of luxuriance, into four, erect, or erecto-patent teeth at the extremity. *Filaments* of the *stamens* united and incorporated so as to form a thickened, whitish, cylindrical body, about as long as the perianth, of which the top is rounded, and the upper half covered by about eleven longitudinal, linear-oblong, two-celled *anthers,* free at their base, opening longitudinally, and charged with yellow *pollen.*

Female flowers scarcely recognizable, at first sight, from the male, except, that the pedicel is very frequently solitary on the peduncle. *Pistil* solitary, shorter than the perianth, broadly-ovate, a little tapering upwards into a short *style,* and bearing a two-lobed persistent *stigma:* a broad, differently-coloured band is generally visible near the middle. As the *germen* swells, the *perianth* falls away: the former then becomes obovate, and, from its weight, pendent, constituting a nearly spherical *Drupe,* of the size, and somewhat of the shape of a small pear. The *flesh,* which abounds in an astringent juice, is of a yellowish colour, almost white within, four or five lines in thickness: this opens into two, nearly equal, longitudinal valves, and presents to view the *Nut,* surrounded by its *arillus,* or *Mace,* which soon drops out, and the husk withers.

Arillus thick, between horny and fleshy, much laciniated,
folded

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Pub by [illegible] Walworth Aug. 1. 1827.

folded and anastomosing towards the extremity, enveloping the *nut* almost entirely, and so tightly, as to form inequalities on its surface. The *colour*, when fresh, is a brilliant scarlet. When dry, it becomes much more horny, of a yellow-brown colour, and very brittle. *Nut* broadly ovate, or oval, the *shell* very hard, rugged dark-brown, glossy, about half a line thick, pale, and smooth within. This immediately envelopes the *seed* (the Nutmeg as sold in our shops) which is of an oval or elliptical form, pale brown, quite smooth, when first deprived of its shell, but soon becoming shrivelled, so as to have irregular, vertical lines or furrows on its surface. Its *outside* very thin; its inner substance or *albumen* is firm, but fleshy, whitish, but so traversed with red-brown veins, which abound in oil, as to appear beautifully marbled. Near the base of the albumen, and imbedded in a cavity in its substance, is situated the *Embryo*, which is large, fleshy, yellowish-white, rounded below, where is the *radicle*; its *cotyledons* of two, large, somewhat foliaceous, plicate lobes, in the centre of which is seen the *plumule*.

The true *Nutmeg tree* is a native of the Molucca, or Spice Islands, principally confined to that groupe denominated the islands of Banda, lying in lat. 4° 30′ south: and there it bears both blossom and fruit at all seasons of the year, and assists, with other aromatic trees and shrubs, to form that atmosphere of fragrance, in the upper regions of the air, in which the natives believe the Birds of Paradise perpetually float. Long before the East India islands were discovered by the Portuguese, the Nutmeg, as well as the Clove, seems to have been known in Europe, through the medium of Persia and Arabia, and since the year 1510, when the first Portuguese navigators visited those islands, they have probably been known as an article of commerce; yet, down to the time of LINNÆUS, nothing was known of the plant that produced this precious fruit; nor till M. CÉRÉ, director of the Royal Garden in the Isle of France, communicated specimens and observations to the Chevalier de LAMARCK.

AVICENNA, who flourished about the year 1160, calls the Nut "*Jiansiban*, or *Jansiban*, which signifies *Nut of Banda*." (POIRÉT.) RUMPHIUS says it was called by the Arabians *Gianzbant*, *Jauzialbant*, and *Gjauz Bawa* (the latter of Persian origin), which means *aromatic nuts*. The Sanscrit name is *Jali-phalo*, and the Hindoo name, to this day, according to ROXBURGH, is *Ja-i-phul*.

The Dutch having possession of the Spice islands in 1619, encouraged, to the utmost of their power, the cultivation of the Nutmeg in a few of them, and were anxious, for the sake of the monopoly, to have them there so exclusively, that they either destroyed them themselves, in the remainder of the isles, or kept their princes in their pay for the purpose of doing so. In fact, they pursued the same line of policy with the Nutmeg, as has been already described with regard to the Clove, under that article (tab. 2749, 2750). They have, more than once, suffered dearly for their insatiable avarice: for the dreadful hurricanes and earthquakes, which spared other islands, nearly annihilated the Nutmegs of Banda in 1778; so, that the Dutch were only able to have a few supplies for several years afterwards. While the Dutch remained undisputed possessors of the Spice Islands, the quantity of Nutmegs and Mace exported from their Nutmeg-grounds, circumscribed as they were, was truly enormous. Stavorinus, in his valuable "Voyage to the East Indies," gives an excellent account of the commercial history of this spice. A quantity, estimated at no less than 250,000 ℔s annually, used to be vended in Europe, and nearly half that amount in the East Indies. Of *Mace*, the average has been 90,000 ℔s sold in Europe, and 10,000 ℔s in the East Indies. When the Spice Islands were taken by the British, in 1796, the importations of the East India Company into England alone, in the two years following the capture, were, of Nutmegs, 129,732 ℔s, and of Mace, 286,000 ℔s. When the crops of spice have been superabundant, and the price likely, in consequence, to be reduced, the same contracted spirit has actuated the Dutch to *destroy* immense quantities of the fruit, rather than suffer the markets to be lowered. A Hollander, who had returned from the Spice Islands, informed Sir William Temple, that, at one time, he saw three piles of Nutmegs burnt, each of which was more than a church of ordinary dimensions could hold. In 1760, M. Beaumaré witnessed, at Amsterdam, near the Admiralty, the destruction, by fire, of a mass of Spice, which was valued at one million of livres, and an equal quantity was condemned to be burnt on the day following: and Mr. Wilcocks, the translator of Stavorinus's Travels, relates, that he himself beheld such a conflagration of Cloves, Nutmegs, and Cinnamon, upon the little island of Newland, near Middleburgh, in Zealand, as perfumed the air, with their aromatic scent, for many miles round.

M. Poivre has the credit of introducing this valuable plant into the isles of France and Bourbon, in 1772, together with the Clove; thence, by the liberal policy of the French, it was sent to Guiana and to the West India Islands.

In 1796, the British took possession of the Molucca Isles, and, two years afterwards, planted the Nutmeg at Bencoolen, in Sumatra, where it has grown with the greatest luxuriance; so that, in five years, the trees had arrived at from ten to fourteen feet in height, and, in October and November, 1802, two hundred and forty seven trees, out of about six hundred, blossomed. About half of these were male and the rest female. A second importation was made to that island, by the assistance of the Bengal government; and the son of Dr. Roxburgh arrived there with twenty-two thousand Nutmeg plants, from Amboyna, which, in a few years, yielded 200,000 ℔s weight of Nutmegs, and 50,000 ℔s of Mace.

In the Moluccas, the Dutch appear to have been totally ignorant of the diœcious nature of the trees, and of the cause of sterility in so many of them. Where the trees are very abundant, this is a matter of comparatively trifling importance: but, in colonies where but few plants have been introduced, it is not only of essential consequence that the female flowers should be fertilized by the male, but that the male plants should be employed in the most œconomical manner. This has been achieved by M. Joseph Hubert, in the Isle of France, in the most successful manner. Ascertaining that one male plant is sufficient for a hundred females, he resolved upon grafting the seedling stock of all his plantations in that proportion, in the second year of their growth: by this means, there are no superfluous trees, and they come into bearing the sooner *. According to the old method, the trees did not bear flowers till the seventh or eighth year; and it was not till that period, that the useless trees could be removed.

In our West Indian colonies, the Nutmeg was introduced about thirty years ago; and, first, to the island of St. Vincent, from Cayenne, though not without great difficulty, on account of the extreme jealousy of the inhabitants of that colony, the two countries being then at war with each other. The three trees which were originally imported have borne fruit for many years, and have attained the height of twenty feet, with a trunk eight or nine inches in diameter. It does not, however, appear, that the culture of the Nutmeg succeeds so well in the West, as in the East Indies. Mr. Lockhart, who has the charge of the plants introduced into the island of Trinidad, by his Excellency Sir Ralph Woodford, observes, in a letter to me, that the plants flourish best in the rainy season; even when moderate showers fall requiring constantly artificial watering; although a soil saturated with moisture is injurious. For a long time, though the trees introduced into St. Vincent produced abundance of flowers, they bore small crops of fruit, until Mr. Guilding recommended the same process as is employed with the caprification of the Fig, when the crops were much more productive, two trees, at one period, bearing three hundred ripe fruits. The process of grafting adopted in the Mauritius might be employed, perhaps, to still greater advantage. Female flowers, which had reached perfection on the 20th of June, became ripe fruit from the 6th to the 12th of February following; this is the case, at least, in the island of St. Vincent, according to Mr. Guilding; who, further observes

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* My friend, Mr. Telfair, has been so good as to communicate to me, from the Mauritius, an interesting account of the culture of the Nutmeg in that country, in the "Archives de l'Isle de France," and entitled, "Sur la culture du Muscadier, par feu M. de Cossigny," in which the method I have here related is detailed.

observes, that the trees are almost always in flower; that fruit is most abundant in April, May, and June; and that the seed vegetates at the expiration of six weeks from the period of its being put into the ground.

In the East Indies, as I have already observed, the trees are almost *always* loaded with flowers and fruits. In the Moluccas, the gathering of the fruit takes place at three periods of the year; in July and August, when the Nutmegs are most abundant, but the Mace is thinner than in the smaller fruits, which are gathered during November, the second time of collecting: the third harvest takes place in the month of March, or beginning of April, when the Nuts, as well as the Mace, are in the greatest perfection, their number being then not so great, and the season being dry. The outer pulpy coat is removed, and, afterwards, the *Mace*, with a knife. The *Nuts* are placed over a slow fire, when the shell becomes very brittle, and the *Seeds*, or *Nutmegs*, drop out: these are then soaked in sea-water, and impregnated with lime, a process, which answers the double purpose of securing the seeds from the attack of insects, and of destroying their vegetating property. It further prevents, the volatilization of the aroma. The Mace is simply dried in the sun, and then sprinkled with salt water, after which it is fit for exportation.

The uses, both of the *Mace* and *Nutmeg* are well known, whether in a medicinal or œconomical point of view. The whole fruit, preserved in sugar, is brought to table with the dessert, but not till after the acrid principle has been, in a great measure, removed, by repeated washings.

An essential oil is obtained from the Nutmeg and the Mace, by distillation, and a less volatile one by expression.

For most of the drawings here given, made in the West Indies, from the living plants, and for many valuable notes, I am indebted to the Rev. L. Guilding. For some healthy young plants, which are flourishing in the Glasgow Botanic Garden, I have to acknowledge my obligation to his Excellency Sir Ralph Woodford.

Tab. 2756. A. Fig. 1. A branch from a Male plant of Myristica *officinalis*, natural size. 2. Male Flower cut open to shew the Column of Stamen. 3 Anther (copied from Roxburgh). 4. Female Flower cut open to shew the Pistil.

Tab. 2757. B. Fig. 1. Young Fruit. 2. Ripe Fruit in the act of bursting. 3. Section of a fully-formed Fruit, shewing the Nut included in the Mace, *natural size*. 4. The Mace from which the Nut has been removed. 5. The Nut. 6. The Seed, or Nutmeg. 7. Nut cut through vertically, shewing the Albumen, and the Embryo imbedded in the base of it. 8 and 9. The Embryo.—Only 8 and 9 *magnified*.

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Pub. by S. Curtis, Walworth, Aug. 1 1827.

CERATIOLA ERICOIDES. HEATH-LIKE CERATIOLA.

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Class and Order.

DIŒCIA DIANDRIA.

(Nat. Ord.—EMPETREÆ.)

Generic Character.

MASC. *Perianthium* e squamis 5—7, imbricatis, fimbriato-ciliatis. *Stam.* 2. *Pistillum* nullum.

FÆM. *Perianthium,* ut in mari. *Pistillum* unicum. *Stylus* incrassatus, deciduus. *Stigma* radiato-multifidum. *Bacca* nucibus duabus monospermis.

Specific Name and Synonyms.

CERATIOLA *ericoides.*

CERATIOLA ericoides. *Mich. Fl. Bor. Am. v.* 2. *p.* 222. *Willd. Sp. Pl. v.* 4. *p.* 712. *Pursh N. Am. Fl. v.* 1. *p.* 21. *Nutt. Gen. N. Am. v.* 2. *p.* 232. *Elliott Bot. of S. Carol. and Georgia. Spreng. Syst. Veg. v.* 1. *p.* 95. *D. Don. in Edin. New Phil. Journ.* 1826. *p.* 63.

DESCR. An upright, much branched, twiggy *shrub,* from two to four, and even eight feet high: *branches* subverticillate, erect, marked with the scars whence the numerous leaves have fallen, the younger and upper branches alone retaining their leaves, and those are slightly tomentose. *Leaves* verticillate, quaternate, patent, half to three-quarters of an inch long, linear, rigid, acerose, shining, pale, the upper side semicylindrical, the under, grooved in the middle, the base narrowed into a very short petiole, which is jointed upon a little tooth or projection of the bark, and this gives the scarred appearance to the stems and branches when the leaves have fallen away. *Flowers* in the axils of the upper leaves solitary, with a small (abortive?) one on each side, the males on one plant, the females on a separate plant. *Perianth* of each forming an imbricated gemma, or bud, resembling a minute catkin, ovate, composed of about five or six erect, brownish, thin, membranaceous scales, all originating from the same point, the inner much the largest, convolute, all fimbricated at the margin, and somewhat tomentose towards the apex. *Stamens* two, united at the base by a small point, which appears to be a very minute abortive pistil. *Filaments* flexuose, longer than the perianth, purple. *Anthers* large, ovato-globose, two-lobed, each lobe constituting a cell, which opens laterally by a longitudinal fissure. *Pistil,* for three-quarters of its length, enveloped by the perianth. *Germen* ovate, green, above slightly hispid, and glandular, having two *ovules*. *Style* incrassated, columnar, the base inserted into a little hollow on the top of the germen, and there at length separating from the germen. *Stigma* of three or four multifid brownish-purple rays, umbilicated in the centre. *Fruit* a small orange-yellow *Berry,* spherical, glabrous, surrounded at the base by the scales of the perianth, with a small umbilicus at the top: enclosing two hemispherical, closely placed, wrinkled *nuts,* each having one erect seed of the same shape. *Albumen* white, between fleshy and corneous. *Embryo* cylindrical, in the centre of the albumen, erect.

A native of dry and sandy soils in South Carolina and Georgia, where it was first detected and afterwards described by MICHAUX. On the Edisto river, Mr. ELLIOTT says, "it covers a space of three or four hundred yards in width, and two or three miles long, which appears to have been a sand-bank formed by some of the ancient freshets of that river, and on which only Lichens, and a few stunted Oaks (Q. *Catesbæi* and *nigra*) are found intermingled with it."

I am indebted for the opportunity of figuring this hitherto little-known plant to my excellent friend, STEPHEN ELLIOTT, Esq. of Charleston, S. Carolina, who, to an extensive collection of living plants of the Southern states of N. America, which he was so good as to send this year (March 1827), to the Glasgow Botanic Garden, added four of the CERATIOLA *ericoides*. These bore the voyage so well, as to afford immediately upon their arrival, male and female flowers and fruit. By the details that I have hence been able to give, it will be at once seen how closely this plant is allied to EMPETRUM; especially to E. *album;* and, perhaps, it might, without much violence to nature, be united with it. EMPETRUM *nigrum* has the three innermost scales of the flowers decidedly coloured, and of a different shape from the rest, spreading out and even recurved. EMPETRUM *album* has a distinct mucronate bractea at the base of the flower, and two to four of the inner scales of the perianth, sometimes coloured (reddish) and a little spreading, thus being as it were intermediate between E. *nigrum* and our CERATIOLA.

A. Portion of a Female Plant: *nat. size.* *f.* 1. Part of a Stem with Leaves. 2. Male Flower. 3. Inner Scale of ditto with Stamens. 4. Female Flowers with abortive lateral ones. 5. Pistil. 6. Section of Germen. 7. Berry. 8. Section of ditto. 9. Nuts. 10. Single Nut, interior side. 11. Section of a Nut. 12. Seed. 13. Section of ditto, shewing the Embryo:—*All more or less magnified.*

2759.

[illegible]

Pub by S. Curtis Walworth [illegible]

SIDA MOLLIS. SOFT-LEAVED SIDA.

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Class and Order.

MONADELPHIA POLYANDRIA.

(Nat. Ord.—MALVACEÆ.)

Generic Character.

Cal. nudus quinquefidus sæpe angulatus. *Stylus* apice multifidus. *Carpella* capsularia, 5—30 circa axim verticillata, plus minusve inter se coalita, 1-locularia, mono aut oligosperma, apice mutica aut aristata. *D. C.*

Specific Character and Synonyms.

SIDA *mollis;* foliis orbiculari-cordatis acuminatis inæqualiter dentato-serratis pubescenti-mollibus, pedunculis solitariis subbifloris petiolo brevioribus, capsulis 9 mucronato-acuminatis hirtis calyce parum longioribus, ramis hirsutissimis.

SIDA mollis. *"Ort. Dec. p.* 65." *De Cand. Prodr. v.* 1. *p.* 470. *Spreng. Syst. Veg. v.* 3. *p.* 121.

SIDA grandifolia. *"Willd. Enum. v.* 2. *p.* 274." *Bot. Reg. t.* 360.

DESCR. A *shrub* or small *tree,* attaining a height, even when cultivated in the stove, of from ten to twenty feet, bearing numerous, rounded branches, of which the younger ones are green, and, as well as the petioles and peduncles, clothed with long, soft *hairs.* *Leaves* alternate, rather remote, large, orbiculari-cordate, acuminate, the lobes at the base rounded, and meeting together, the margin unequally dentato-serrated, the surface clothed on both sides with exceedingly soft pubescence; the *nerves* diverge mostly from the base of the midrib, and all are connected by transverse nervelets or veins, prominent beneath. *Petiole* about as long as the leaf, having a linear-setaceous *bractea* on each side at the base. *Peduncle* axillary, solitary, somewhat shorter than the petiole, bearing, in our plant, two pedicellated, large, handsome, orange-yellow flowers. *Calyx* almost five-partite, the segments ovate, reflexed at the margins. *Petals* twice the length of the calyx, orange-coloured, wedge-shaped, rounded and crenate at the extremity, somewhat oblique, the base narrow, united there to each other, and to the column of stamens, a little ciliated just above this point of union. *Tube* of *Stamens* somewhat conical, yellow, dividing at the extremity into numerous yellow *filaments,* bearing deep orange-coloured reniform, one-celled *anthers*. *Pollen* large, globose. *Pistil : Germen* rounded, hairy, with nine points, and as many longitudinal angles. *Style* as long as the stamens, separating into nine at the top, each tipped with a globose brown stigma. *Capsules* nine, circularly disposed round an axis, and there united, compressed, inflated, somewhat membranaceous, longer than the persistent calyx, very hairy, glabrous only where the sides touch each other, and there semipellucid: the top truncated at the outer angle, lengthened into a mucro, opening interiorly and longitudinally, and bearing four seeds attached to the suture.

This is really a very desirable plant for the stove. Its leaves are large, handsome, and its flowers when the plant is well grown, are two inches across, of a fine clear orange-yellow, and produced in considerable abundance. It is a native of Peru.

Seeds were received at the Glasgow Botanic Garden from Gottingen, under the name of S. *grandifolia ;* and, as such, it is published in WILLDENOW's Enumeratio, and figured in the Botanical Register.

Fig. 1. Section of the Staminiferous Tube. 2. Anther, 3. Pistil. 4. Capsule. 5. The same laid open to shew the Seeds :—*More or less magnified.*

2760.

W.J.H. del.

by S. Curtis, Walworth, Aug.t 1.1827.

Swan sc.

DORSTENIA CERATOSANTHES. CLEFT DORSTENIA.

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Class and Order.

MONŒCIA DIANDRIA.

(Nat. Ord.—URTICEÆ.)

Generic Character.

Receptaculum carnosum dilatatum, patens, superne papillosum vel squamosum: papillis vel squamis intus florigeris. *Cal.* o. *Cor.* o. *Stam.* 2. *Pistillum* receptaculo immersum: *Stylus* bifidus, lateralis. *Pericarpia* monosperma.

Specific Character and Synonym.

DORSTENIA *ceratosanthes;* acaulis, foliis oblongo-cordatis subserratis reticulato-venosis scabridis, receptaculo bipartito, laciniis lineari-acuminatis margine laciniatis.
DORSTENIA ceratosanthes. *Lodd. Bot. Cab. t.* 1216.

DESCR. I am unacquainted with the root of this plant, from the top or crown of which the *leaves* are said immediately spring: these are elevated upon a footstalk, about six to eight inches long, oblong, or ovato-oblong, acuminated, the margin obscurely serrated, the base cordate, the surface marked with numerous reticulated veins, which contract the substance of the leaf so as to make it blistery on the upper surface, every where rough to the touch, but with points so minute, that they are scarcely visible with a common lens: the *colour* is very dark green on the upper surface, much paler beneath, where the nerves are very prominent. *Receptacles* upon a scape, shorter than the leafstalk, and compressed upwards, two or three inches long, rounded at the base, cleft from the top almost to the bottom, into two linear-acuminated segments, plane above, keeled beneath, and there furnished with a midrib, the margin papillose, and beneath the papillæ are several filiform

form laciniæ, or appendages, most numerous on the outside of the segments: these are downy when seen under a microscope. The upper surface of the receptacle is covered with numerous papillæ, of two kinds, the one perforated and covering the cell of the female flowers; the other, which are of a purple colour, when examined carefully, are formed of two concave hemispherical downy scales, each enclosing a stamen, of which the filament is short, and terminated by two nearly-white globular cells, opening by a transverse fissure. *Pistil* having an ovate *germen,* from the side of which springs the *style* with an incrassated base, tapering upwards, and dividing into two rather short filiform spreading *stigmata.* The *style* is protruded through the aperture in the tubercle above mentioned, while the whole of the germen is immersed.

This very curious species of DORSTENIA was communicated by the Horticultural Society of London to the Liverpool Botanic Garden, where it flowered in the month of April, 1826; but of what particular country it is a native I am ignorant. In the shape of the leaves it is most nearly allied to the young foliage of D. *arifolia,* which is, however, smaller, destitute of that roughness, which, in the present species, is scarcely sensible but to the touch, and they are decidedly sagittate. The receptacle is very singular and quite different from that of every other species with which I am acquainted*.

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* I had called this species D. *bifida,* but just as I was on the point of sending the MSS. to the press, I received the 122d No. of Mr. LODDIGES Botanical Cabinet, where I find that it bears the name I have now adopted. It is said to be a native of South America; but of what part is not stated.

Fig. 1. Section of one of the Segments of the Receptacle. 2. Under side of a portion of ditto. 3. The two Scales constituting the tubercle or papillæ which include the Male Flower. 4. Stamen. 5. Pistil:—*More or less magnified.*

W.J.H. del.^t

Pub. by S. Curtis, Walworth, Aug.^t 1 1827.

GNIDIA TOMENTOSA. DOWNY GNIDIA.

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Class and Order.

OCTANDRIA MONOGYNIA.

(Nat. Ord.—THYMELEÆ.)

Generic Character.

Perianthium simplex, coloratum, tubulosum, quadrifidum. *Squamæ* ad faucem. *Antheræ* tubo insertæ. *Nux* monosperma.

Specific Character and Synonyms.

GNIDIA *tomentosa;* foliis oppositis decussatis elliptico-ovatis obtusiusculis nervosis hirsutis subtus scabriusculis, floribus capitatis villosis, squamis antheriformibus 8 per paria approximatis. *Linn. Sp. Pl. p.* 512.
GNIDIA tomentosa. *Thunberg Fl. Cap. v.* 1. *p.* 381. *Willd. Sp. Pl. v.* 2. *p.* 427. *Spreng. Syst. Veg. v.* 2. *p.* 239.
GNIDIA pubescens. " *Berg. Cap.* 124." *(Willd.)*
GNIDIA denudata ? *Lindl. in Bot. Reg. t.* 757.

DESCR. A twiggy *shrub,* three or four feet high, bare of leaves below, proliferous, very leafy and downy at the extremities. *Leaves* opposite, decussate, more or less patent, sometimes reflexed, ovate, or ovato-lanceolate, very often approaching to oblong or elliptical, sessile, rather obtuse at the point, five-nerved, hairy, especially the upper and younger leaves, the hairs patent, the older ones often glabrous above, the underside slightly scabrous when seen through a lens, and more conspicuous in the dried than in the living plant. *Flowers* sessile, collected into a sort of fasciculated head at the extremity of the younger shoots, and surrounded by four closely-placed leaves which form an involucre : *Tube* long and slender, swollen at the base, where the germen is contained, and a little so at the extremity, externally clothed with long, generally much spreading, white, and rather silky hairs : *Segments* lanceolate,

late, spreading horizontally, faintly 3-nerved, pale yellow, the inner or upper side quite free from pubescence. At the mouth of the tube are eight, erect, linear, greenish *glands* or scales, placed in pairs at the sinus of the segments; alternating with these four pairs, having the same line of insertion, are four linear, almost sessile *anthers*: these are opposite the middle of the segments of the *Perianth*: lower down, and alternating with them, are four others. *Pistil*: *Germen* oval, a little hispid at the point: *Style* shorter than the tube, inserted below the apex of the germen, flexuose, filiform, terminated by a clavate, white, hispid *stigma*.

Introduced, but I know not in what year, from the Cape of Good Hope, by Mr. AITON, of Kew, and by that gentleman, kindly presented to the Glasgow Botanic Garden, where it produces its pale yellow and very agreeably night-scented flowers in the greenhouse, in the months of March and April. We received it with the name here adopted, and it perfectly agrees with a specimen in my Herbarium of GN. *tomentosa*, from Professor THUNBERG. I am inclined to think, however, that the GNIDIA *denudata* of Mr. LINDLEY, in the Bot. Register, is merely a variety of the same species; for, in hairiness, the species is certainly liable to great variation; and, perhaps, the GNIDIA *imbricata* of LODDIGES, t. 890, is not to be considered distinct from it. THUNBERG attributes to the *imbricata* of LINNÆUS four nectaries at the mouth of the tube, but, in other respects, his description is not at variance with his own specimens of *tomentosa*.

Fig. 1. Flower. 2. Section of the upper part of a Flower, shewing the insertion of the Stamens, and the Scales in Glands. 3. Pistil:—*Magnified*.

2762.

Pub. by S. Curtis, Walworth Sept. 1. 1827.

TULIPA STELLATA. STELLATED EAST INDIAN TULIP.

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Class and Order.

HEXANDRIA MONOGYNIA.

(Nat. Ord.—LILIACEÆ.)

Generic Character.

Perianthium inferum, campanulatum, hexaphyllum. *Stylus* nullus. *Semina* plana.

Specific Character.

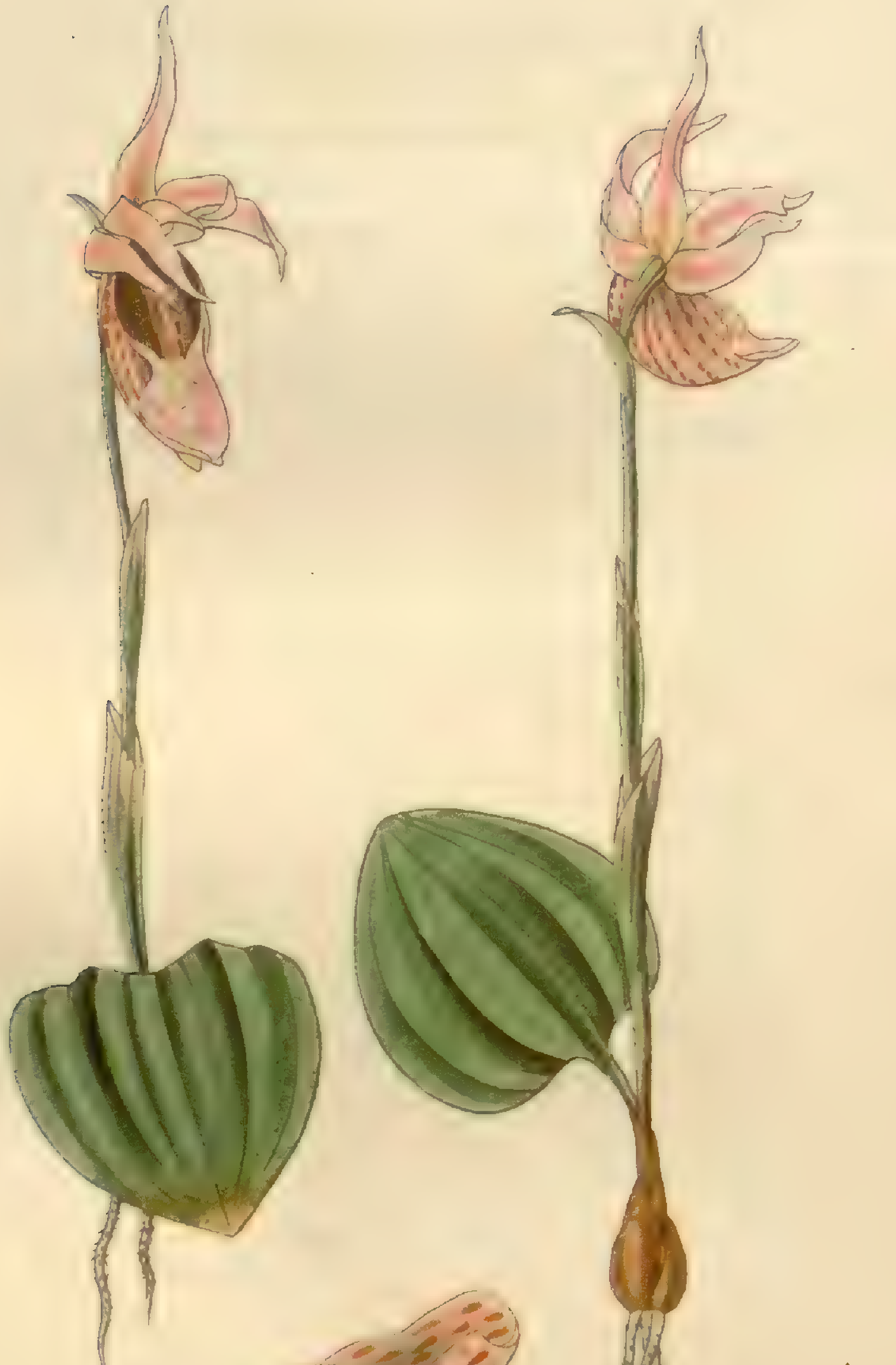
TULIPA *stellata*; foliis lineari-lanceolatis subconvolutis glaucis, petalis lanceolatis obtusis patentissimis, tribus exterioribus longioribus, filamentis æqualibus glabris, pistillo staminibus breviore.

DESCR. *Bulb* broadly ovate, small, clothed with a dark-brown coat, which is cut at the extremity into three or four lanceolate segments, thickly clothed with fulvous hair in the inside:—the bulb throws out an offset from near the base. *Stem,* in the cultivated specimens, nearly two feet high, terete, glaucous, bearing four to five linear-lanceolate, very long, and narrow *leaves,* subconvolute, with a midrib prominent on the underside, and a few obscure striæ; the lower leaves are much the broadest and slightly falcate, the upper ones linear, acuminate, and somewhat twisted. *Flowers* solitary, or sometimes two upon the same stem, erect, oblong in bud; when fully open the *petals* spread out horizontally: they are lanceolate, slightly concave, obtuse; the three outer longer than the rest, and, sometimes, perhaps the effect of luxuriance, having a single tooth on one side: all are pure white, with a faint tinge of pink and green at the points on the outside, and bright yellow at the base within. *Stamens* equal in length, yellow. *Filaments* subulate. *Pistil*: *Germen* green, triquetrous: *Stigma* trigonal, sessile.

This very delicate species of Tulip was sent (from "Kumana," according to Mr. SHEPHERD,) by Dr. WALLICH, to the Liverpool Botanic Garden, under the name of "TULIPA *Clusiana*?" But, as Mr. SHEPHERD observes, it is very different from that plant; and, as it appears to me also, from every other of the genus, although its characters are not very easily defined. It is remarkable for the narrowness of the petals, and their spreading out almost flat in the middle of the day when the sun shines, and closing again in the evening. The bulbs were received from the East Indies, in the month of January; and in two months from that period, they produced flowers. Cultivated in the greenhouse.

It will, probably, prove hardy enough to bear the open air; and is certainly a most valuable acquisition to our gardens.

Fig. 1. Stamen, and f. 2, Pistil, shewing their relative height.—*Both magnified.*



W.J.H. delt.

Pub. by S. Curtis, Walworth, Sept. 1. 1827.

Swan Sc.

CALYPSO BOREALIS. NORTHERN CALYPSO.

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Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ.)

Generic Character.

Labellum ventricosum, prope apicem subtus calcaratum. *Petala* adscendentia, secunda. *Columna* petaloidea, dilatata. *Massæ* pollinis 4. *Br.*

Specific Name and Synonyms.

CALYPSO *borealis.*
CALYPSO borealis. *Salisb. Parad. Lond.* 89. *Richard de Orchid. in Mem. du Mus. v.* 4. *p.* 60. *Pursh Fl. of N. Am. v.* 2. *p.* 593. *Hook. Exot. Fl. t.* 12.
CALYPSO Americana. *Br. in Hort. Kew. v.* 5. *p.* 208. *Nutt. Gen. N. Am. v.* 2. *p.* 194. *Sprengel Syst. Veg. v.* 3. *p.* 733.
ORCHIDIUM boreale. *Swartz in Svensk. Bot. t.* 518.
LIMODORUM boreale. *Willd. Sp. Pl. v.* 4. *p.* 123. *Sw. de Orchid. p.* 85.
CYMBIDIUM boreale. " *Sw. in Nov. Act. Ups. v.* 6. *p.* 76.
CYPRIPEDIUM bulbosum. *Linn. Sp. Pl. p.* 1347.

DESCR. *Root,* a small scaly *bulb* or *tuber,* sending out two or three simple and somewhat downy fibres. *Leaf* solitary, springing from the top of this bulb, and generally lying upon the ground, cordate, entire, rather obtuse, striated, having two remarkable elevated plaits in the middle of each half of the leaf, the striæ connected by delicate transverse nerves or veins. *Petiole* half an inch to an inch long. *Scape* three to four inches high, clothed, for the greater part of its length from the base, with long tubular sheaths; the upper one the smallest, and a little reflexed. *Flower* large, solitary, drooping. *Petals* five, delicate rose-coloured, lanceolate, acuminated, pointing forward, except the upper

one, which is nearly erect. *Lip* large, pendent, ovato-oblong, remarkably concave, inflated, slipper-shaped, pale reddish-brown, with dark dots placed in lines; below, it terminates in two tooth-like points, and these are, above, covered by a pale, almost whitish lamina, having a tuft of yellow hairs at the base, and a few brown spots: it is sometimes as long as, sometimes shorter than, the two teeth, sometimes bifid at the point; at other times, as in the present specimens, quite entire. *Column* large, dilated, convex, oval, petaloid, rose-coloured. *Anther* white, cordate, inserted just within the point of the column. *Pollen masses* four, ovate, compressed, in two pairs, the under ones the smallest, fixed upon a large white membranous base.

I have, on a former occasion*, stated it, as my opinion, that the American and European Calypso should only be considered as one species, and the present figures, drawn from living plants, sent from Montreal, by Mr. CLEGHORN, seem to confirm this opinion, having the two teeth of the labellum as short, if not shorter than the lamina, which has been given, by Mr. BROWN, as the essential character of the European plant. SPRENGEL again, relying probably on my figures in Exotic Flora, has made a principal character of the *C. Americana* to depend on the bifid lamina; but, in the present individuals, that is quite entire as in SWARTZ's figure. So that we see, even in the same country, that the structure of the flower is liable to vary. Our plants flowered in a cool part of the greenhouse, in the latter end of March, being kept in the same earth and the same box, in which the roots were imported the preceding year.

It appears to be a general inhabitant of the northern parts of Europe and America. In Canada it is common. Dr. RICHARDSON and Mr. DRUMMOND found it about Lake Erie; Mr. MENZIES at Nova Scotia; Governor LEWIS and Mr. SCOULER on the north-west coast of America. Its beauty must recommend it, as highly deserving a place in every collection.

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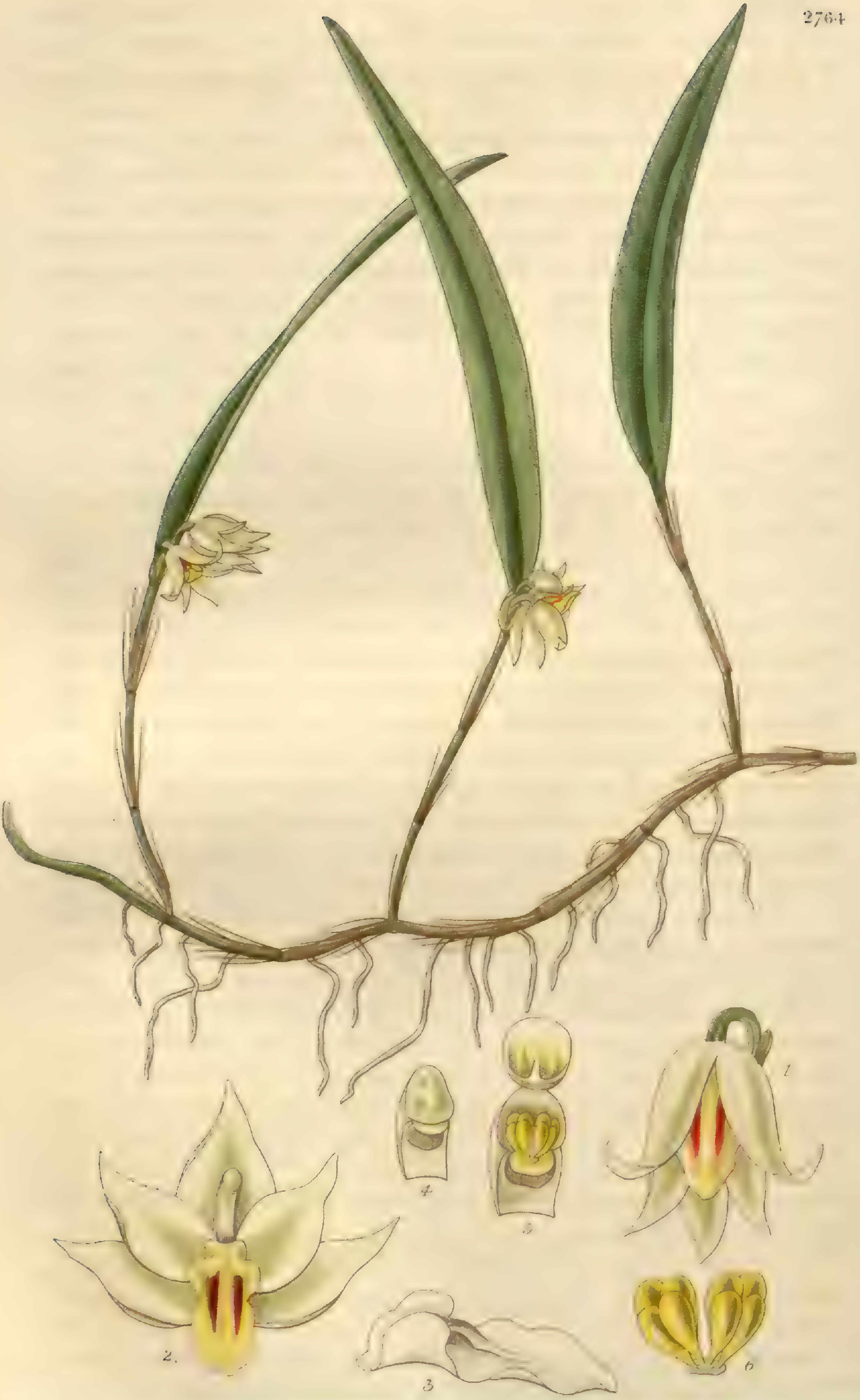
* Exotic Flora, p. 12.

Fig. 1. Side view of the Lip. 2. Column of fructification. 3. Ditto, the Anther-case being removed, and exposing the Pollen Masses in situ. 4. Anther-case. 5. Front view of the Pollen Masses. 6. Back view of ditto.—*Magnified.*

2764



W.J.H. delt Pub by S. Curtis, Walworth, Sept 1. 1827 Swan

OCTOMERIA GRAMINIFOLIA. GRASS-LEAVED OCTOMERIA.

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Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ.)

Generic Character.

Labellum articulatum cum processu unguiformi, cujus lateribus petala antica adnata. *Massæ pollinis* 8. *Br.*

Specific Character and Synonyms.

OCTOMERIA *graminifolia;* caule elongato unifolio, folio lanceolato, pedunculis geminatis unifloris, radice repente.
OCTOMERIA graminifolia. *Br. in Hort. Kew. ed.* 2. *v.* 5. *p.* 211. *Spreng. Syst. Veg. v.* 3. *p.* 744.
EPIDENDRUM graminifolium. *Linn. Sp. Pl. p.* 1353.
DENDROBIUM graminifolium. *Willd. Sp. Pl. v.* 4. *p.* 135.
HELLEBORINE graminea repens biflora. *Plum. Ic. t.* 176. *f.* 1.

DESCR. Parasitic? *Root* creeping, jointed, flexuose, sheathed with scales, which separate into setaceous filaments in age, and give a curious setose appearance to the plant: from the under side of this creeping root many fibres descend. *Stems* several from the upper side of this root, rising singly from the joints, two or three inches long, slender, almost filiform, jointed, the articulations sheathed with scales, which become, at length, setose, as do those of the root. *Leaf* solitary, terminating the stem, linear-lanceolate, thick, and coriaceous, with a central nerve, prominent beneath. At the base of this leaf on the upper side are a few small, ovate, brownish bracteæ, from whence arise two very short peduncles, and, as well as the germen, which is not half an inch long, curved, so as to bear a pendant, solitary *flower,* of which all the segments of the perianth are placed in a manner so regular as to appear campanulate. Five of these are nearly equal in size (the *petals*), pale yellow-green, ovato-acuminate, veinless, the points a little recurved. The sixth division, or *lip,* is oblong, rather obtuse, a little shorter than the petals, waved, bright-yellow, with two, incurved, lateral, rounded lobes near the base, and two oblong, bright, red-brown tubercles between them. Column small, yellow, semi-cylindrical, a little curved forward. *Anther* broadly ovate, covering eight, obovate or clavate, yellow, waxy *pollen masses,* attached to a small gland, lying on the base of a white membrane which covers the top of the stigma.

This very curious orchideous plant, which has much the habit and mode of growth of a Fern (what we here call the root being analogous to the stipes, or a creeping stem,) was introduced to the Royal Gardens at Kew, from the West Indies, in 1793, by Rear Admiral Bligh. The specimens from which our figure and description were taken were sent to the Glasgow Botanic Garden, in 1826, from the island of St. Vincent, by the Rev. L. Guilding. They flower in the stove in April, and the blossoms yield a delightful fragrance, most powerful in the evening.

In the situation of the flowers, at the base of a solitary leaf, this plant has much affinity with the Pleurothallis *ruscifolia*, figured in Exotic Flora, t. 197; but, on a careful examination of the flowers, they will be found to be quite different in structure. Here the petals are all distinct, and the *pollen masses* are eight in number, which have given origin to the generic name, Octomeria.

Fig 1. Flower. 2. The same with the Perianth a little forced back. 3. Lip. 4. Summit of the Column bearing the Anther. 5. The same, the Anther lifted up, still attached at the back of the Column, to shew the Pollen Masses, and the membrane at their base. 6. Pollen Masses :—*All more or less magnified.*

W. J. H. del.   Pub. by S. Curtis Walworth. Sept 1. 1827   Swan Sc.

TRIXIS AURICULATA. AURICULATED TRIXIS.

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Class and Order.

SYNGENESIA POLYGAMIA ÆQUALIS.

(Nat. Ord.—COMPOSITÆ. *Div.* LABIATIFLORÆ.)

Generic Character.

Involucrum polyphyllum, bracteatum. *Receptaculum* nudum seu subpilosum. *Flosculi* omnes æquales (bilabiati), labio exteriore trifido, interiore bifido. *Antheræ* basi bicalcaratæ. *Pappus* sessilis, scaber. *Spreng*.

Specific Character and Synonyms.

TRIXIS *auriculata;* fruticosa, foliis sessilibus auriculatis pubescentibus subtus tomentosis sparse denticulatis, paniculis axillaribus terminalibusque divaricatis paucifloris.

PERDICIUM Brasiliense. *Graham in Jameson's New Journ. of Science,* 1827, *p.* 387.

DESCR. " *Stem* woody, round. *Bark* brown, cracked. *Branches* green, woolly, flexuose. *Leaves* scattered, at length revolute from the apex, sessile, winged, lanceolate, ciliato-denticulate, pale green, densely pubescent above, covered with yellowish, short tomentum below, glutinous; wings rounded, quite entire, stem-clasping, at first spreading flat, afterwards revolute in their edges. *Peduncle* axillary, generally supporting three flowers, round, about half the length of the leaves, spreading, and afterwards divaricated; *pedicels* spreading, at length divaricate, as well as the peduncles, pubescent; one of the pedicels is generally provided about its middle with a small ovate leaf. The *Peduncles, Pedicels,* and reflected *Calyx* become brown, and long remain attached to the plant. *Flowers* nodding: *Calyx* persisting, calycled, cylindrical, green, of eight equal linear-lanceolate keeled scales; *calycle* persisting, of five or six unequal, lanceolate leaflets, spreading at the apex. *Corolla* white, pubescent on the outside, bilabiate, outer lip much the largest, reflected, its edges involute, apex three-toothed: inner lip revolute, cleft to its base; *faux* inflated; *tube* curved outwards. *Anthers* brownish-yellow, extending from the throat to the stigma; *spurs* two, from the base of each anther, somewhat waved, nearly as long as the filaments, and almost colourless: *filaments* inserted into the upper part of the tube. *Stigma* cleft, revolute, yellow; *Style* turned at the base, and slightly swelling towards the stigma, nearly as long as the outer lip of the corolla, white. *Seed* long, pubescent, surmounted with a small spreading saucer, the edges of which support the pappus, and the style is inserted into a little elevation in the centre: pubescence tubular, and yielding from its extremity a transparent fluid. *Pappus* sessile, yellow, hair-like, rough, reaching to the limb of the corolla. *Receptacle* subpilose, pitted.

"This plant was received at the Royal Botanic Garden, Edinburgh, from Mr. OTTO, of Berlin, under the name of PERDICIUM *Brasiliense;* but, I entirely agree with Dr. HOOKER, that it is a new species, and, I adopt the specific name which he suggested." GRAHAM Mss.

Fig. 1. Lower Leaf. 2. Section of the Involucre. 3. Floret. 4. Hair of the Pappus :—*All but f. 1. more or less magnified.*

2766.

W. J. H. del.

Pub. by S. Curtis, Walworth, Sept. 1, 1827.

Sc.

JUSTICIA VENTRICOSA. HOP-FLOWERED JUSTICIA.

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Class and Order.

DIANDRIA MONOGYNIA.

(Nat. Ord.—ACANTHACEÆ.)

Generic Character.

Cal. æqualis, 5-raro 4-partitus. *Corolla* valde irregularis, bilabiata vel ringens, labio inferiore diviso. *Stamina* duo, antherifera. *Antheræ* biloculares, loculis insertione sæpius inæqualibus. *Filamenta* sterilia nulla v. obsoleta. *Ovarii* loculi dispermi. *Dissepimentum* adnatum. *Semina* retinaculis subtensa. *Br.*

Specific Character and Synonym.

JUSTICIA *ventricosa;* fruticosa, foliis oblongo-ovatis integerrimis glabris, spicis oblongis, bracteis imbricatis rotundatis venosis, corollis bilabiatis, labiis venosis, labio superiore ovato subintegro, inferiore trilobo.

JUSTICIA ventricosa. *Wallich MSS.*

DESCR. A shrub, from three to four feet high, every where quite glabrous, with numerous opposite branches, the younger ones green, obtusely tetragonal. *Leaves* opposite, large, five to six inches long, on short *footstalks,* subcoriaceous, between ovate and oblong, more or less acute at the extremity, the base attenuated ; the margins quite entire ; the nerves distinct ; dark green above, paler beneath. Spikes of *flowers* terminal upon the numerous branches, two or four inches long, formed of numerous imbricated, rounded, convex, entire, veined bracteæ, each inclosing about three flowers. *Calyx* very short, five-partite ; the segments erect, subulato-lanceolate. *Corolla* scarcely an inch long ; the tube greenish, a little swollen upwards; the *limb* two-lipped, whitish, dashed with a few red spots: *upper lip* erect, ovate, entire, or a little notched, plane, having a narrow groove in the centre, in which the *style* is lodged, and three parallel nerves on each side: *lower lip* broadly ovato-oblong, obtuse, reflexed, prominent in the middle, three-lobed at the extremity, three-nerved, the central nerve pinnated with oblique veins on both sides; the lateral ones only on the outside: the nerves are very prominent on the underside, so as to form pits or hollows between the veins. *Stamens* two. *Filaments* white, shorter than the upper lip, against which they stand: *Anthers* of two conduplicate, yellowish-white lobes, of which one is rounded or hemispherical, the other oblong and acuminated; both containing large globular grains of pollen. *Germen* ovate, seated upon a large yellow-green gland, tapering upwards into a white filiform style: *Stigma* simple, reddish.

This is a native of China, and was introduced thence to the Calcutta Botanic Garden by Mr. REEVES, and from Calcutta, seeds were sent to the Messrs. SHEPHERDS in Liverpool, in 1825. The plant flowers in the stove in April. As a species, it will, perhaps, rank near J. *Ecbolium*, having a similar bracteated spike: but the flowers are very different, and very beautiful in their structure when examined with a little attention, and with the assistance of a microscope.

Fig. 1. Single Flower. 2. Upper Lip of the Corolla, with a portion of the Style lodged in the Groove. 3. Lower Lip, seen from the underside. 4. Anther. 5. Pistil:—*All more or less magnified.*

2767.

W. J. H. del.

Pub by S. Curtis, Walworth, Sept 1 1827

Swan sc

EUONYMUS ECHINATA. SPINOUS-FRUITED SPINDLE-WOOD.

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Class and Order.

PENTANDRIA MONOGYNIA.

(Nat. Ord.—CELASTRINÆ. *Br. De Cand.*)

Generic Character.

Cal. 4—6 lobus, planus, basi disco peltato tectus. *Pet.* 4—6 patentia, disco inserta. *Stam.* 4—6, glandulis supra discum prominulum inserta, petalis alterna. *Stylus* 1. *Capsula* 3—5 locularis, 3—5 angularis, valvis medio septiferis; *semina* in loculis 1—4, pulpa aut arillo involuta. *De C.*

Specific Character and Synonyms.

EUONYMUS *echinata;* foliis ovato-lanceolatis serratis, pedunculis axillaribus filiformibus bis terve dichotomis, capsulis echinatis, caule scandente radicante glabro.
EUONYMUS echinata. *Wall. in Fl. Indica. v.* 2. *p.* 410.
EUONYMUS scandens. *Graham in Jameson's Ed. New Phil. Journ.* 1827. *p.* 386.

DESCR. " *Shrub* climbing to a great distance. *Branches* very long, cylindrical, green, with brown scars, adhering to every thing in contact with them by long, flattened, branching, white threads, which, at first, spring in linear tufts, but afterwards, throughout the whole length of the branches, and, hanging loose on all sides, conceal these in an entangled mass. *Leaves* opposite, and secund on the barren shoots, somewhat decussating; the older ones subcoriaceous; the younger shining and membranous, bright green and paler on the back, ovate or ovato-lanceolate, acuminate, crenato-serrate, the serratures being frequently, especially on the ovate leaves, compound, veins oblique, and, as well as the middle rib, prominent on both sides, reticulations at the edges, most distinct on the under. *Petioles* channelled, approximate on the branches, distichous on the flowering-shoots (quarter of an inch long); *stipules* minute, brown, lacerated, one on each side of the petiole; buds lanceolate, pointed, covered by imbricated, blunt scales, some of which are persistent on the base of the twig. *Bracteæ* small, awl-shaped, brown, reflected, slightly fringed, with brown scales at their edges. *Peduncles* axillary, twice or thrice dichotomous, filiform, angular, straight, nearly three times as long as the petiole. *Calyx* very small, green, tetraphyllous, segments rounded, persisting at every period concave, and closely applied behind the bases of the stamens. *Corolla* yellowish-white, tetrapetalous, *petals* rounded, minutely toothed, reflected, attached by small claws, which are about the length of the calyx, and concealed. *Stamens* four; filaments whitish and tapering, scarcely longer than the claw of the petals, at first erect, afterwards reflected, inserted into broad, flattened, green bases between the petals; *anthers* yellow, of two roundish lobes as long as the filaments. *Germen* flattened, yellowish-green, indistinctly warted. *Stigma,* at first, deep green and sessile, after the shedding of the pollen, paler, blunt, and continuous, with a stout furrowed style, equal in length to the filaments." GRAHAM. *Capsule* of the size of a large pea, flattened at top and bottom, the sides every where clothed with subulate tough prickles, fewer in Dr. GRAHAM's specimens, and much shorter, four-celled, four-seeded.

In addition to the above accurate description of Dr. GRAHAM, I have little more to observe than, that upon comparing the specimens here figured from the Edinburgh Botanic Garden, with original specimens of Dr. WALLICH's EUON. *echinata,* I find them in every particular to correspond; and, I do not know how Dr. WALLICH, in the Fl. Indica, could describe the leaves as having nearly transverse nerves, in opposition to those of E. *vagans,* which are oblique. This naturally induced Dr. GRAHAM to describe his plant as a new species received, indeed, from the Calcutta Botanic Garden, and a native of Nepaul.

E. *vagans,* of Fl. Indica, is very closely allied to this, having exactly similar *oblique* veins to the leaves; and, although Dr. WALLICH has described the capsules as smooth, in my specimens, there is sometimes a disposition to be echinate.

Fig. 1. Back view of a Flower. 2. Disk and Germen, with the Stamens as they appear when in perfection. 3. Flowers more advanced. 4. Flower with the petals fallen. 5. Capsule.—All but f. 5, *more or less magnified.*

2768.

W. J. H. del.

Pub. by S. Curtis, Walworth, Sepr 1. 1827

WITHERINGIA MONTANA. MOUNTAIN WITHERINGIA, OR ST. LORENZO POTATOE.

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Class and Order.

PENTANDRIA MONOGYNIA.

(Nat. Ord.—SOLANACEÆ.)

Generic Character.

Cal. urceolatus 4—5-fidus. *Cor.* campanulato-rotata, tubo gibboso. *Antheræ* longitudinaliter dehiscentes. *Bacca* 2-locularis, calyce persistente suffulta. *Spr.*

Specific Character and Synonyms.

WITHERINGIA *montana;* herbacea, hispido-pilosa, foliis cordato-ovatis obtusis sinuato-repandis, petiolis alatis basi subauriculatis, racemis axillaribus terminalibusque paucifloris, radice tuberosa.

WITHERINGIA montana. *Dunal. Spreng. Syst. Veget. v.* 1. *p.* 676.

SOLANUM montanum. *Linn. Sp. Pl. p.* 514. *Ruiz et Pav. Fl. Peruv. v.* 2. *p.* 33. *t.* 160. *f.* 6. *Willd. Sp. Pl. v.* 1. *p.* 1034. *Pers. Syn. Pl. v.* 1. *p.* 226.

SOLANUM Laurentii. *Mitchill in Addr. to Hort. Soc. of N. York.*

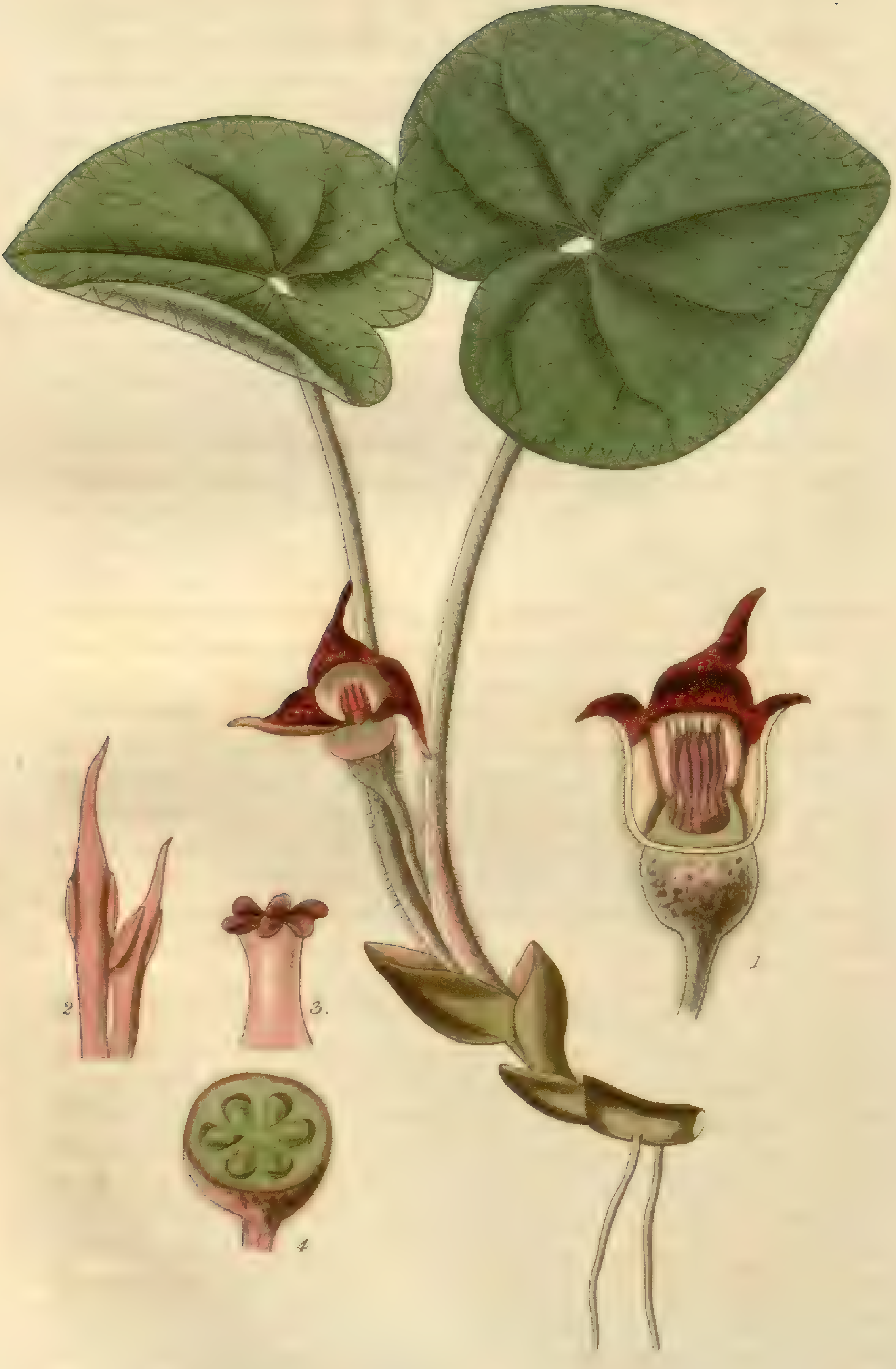
SOLANUM *tuberosum minus;* atriplicis folio, vulgo *Papa* montana. *Feuil. Obs. v.* 3. *p.* 62. *t.* 46.

DESCR. *Root* a roundish or rounded, oblong, thick, fleshy *tuber*, about the size of a chesnut, and very similar to those of our common Potatoe, but bearing a greater quantity of fibrous radicles. *Stems* three or four, from the same root, six inches to a foot in height, decumbent at the base, rounded, with a few obscure angles, and hispid (less so in the lower part,) with numerous pellucid, white, succulent, short hairs, which point upwards. *Leaves* few, two or three of them radical, two to three inches long, cordato-ovato, obtuse, petiolate, sinuato-lobato at the margin, strongly nerved, the nerves prominent on the under side, piloso-hispid: *petioles* about as long as the leaf; those of the stem distinctly winged at the margin, the wings terminating in auricles at the base. *Racemes* almost panicled, few-flowered, terminal, and, according to Ruiz and Pavon, lateral, opposite to the leaves. *Peduncles* long, hispid; *pedicels* also long. *Calyx* hispid, suburceolate, green, cut into five linear-oblong, obtuse, spreading segments. *Corolla* white, rotate, scarcely, except before expansion, at all campanulate, five-lobed, lobes acute, with five greenish rays, and somewhat waved. *Stamens* five, inserted at the base of the corolla, connivent. *Filaments* short, greenish: *Anthers* oblong, two-celled, cells opening longitudinally, deep yellow. *Pistil: Germen* roundish, small, green: *Style* longer than the *Stamens*, deflexed: *Stigma* oblongo-capitate, somewhat glandular, yellow-green.

Our knowledge of this interesting species of Witheringia or Potatoe in a living state, is due to Dr. Samuel Mitchill, of New York, a gentleman who has been unweariedly employed in the promotion of science throughout North America, and who very obligingly communicated some tubers to me in the month of February, 1827. They were gathered on the top of the island of San Lorenzo, in Callao Bay. These were immediately planted in a pot and placed in a cool part of the stove of the Botanic Garden; and in six weeks one of them produced the flowering stem here figured. It agrees so well with a specimen of Solanum *montanum* in my Herbarium, from Lima, and also with the figure in Ruiz and Pavon, that I cannot doubt its being the same, or, I would gladly have adopted the name under which it is published in the excellent address, above referred to, by Dr. Mitchill, who has laudably distributed it to various countries, in the hopes of its being employed as the common Potatoe. Commodore Isaac Hull, says, that when boiled, the tubers are yellow, and of a good flavour. Feuillée has observed, that the Indians employ them very much in their soups and ragouts, and Ruiz and Pavon say, that they are excellent for fattening swine. In all probability, therefore, especially, seeing that the plant is a native of elevated and probably temperate situations, about Lima and Chancay, it may be cultivated as the common Potatoe, and become an useful culinary vegetable. With the protection of a greenhouse, it may be easily raised, and is certainly an ornamental plant. The flowers probably vary much in colour. Ruiz and Pavon describe them as blue, whilst Feuillée says they are rose-coloured. Ours are white. The vernacular name is *Papas de Lomas* and *Papa montana*.

Fig. 1. Stamen. 2. Pistil.—*Magnified.*

2769.



W.J.H. del.

Pub. by S. Curtis. Walworth, Sepᵗ 1. 1827.

Swan Sc.

ASARUM CANADENSE. CANADIAN ASARABACA, OR WILD GINGER.

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Class and Order.

DODECANDRIA MONOGYNIA.

(Nat. Ord.—ARISTOLOCHIEÆ.)

Generic Character.

Perianthium simplex, superum, coloratum, trilobum. *Antheræ* laterales. *Stigma* 6-lobum. *Capsula* 6-locularis.

Specific Character and Synonyms.

ASARUM *canadense;* foliis geminatis cordato-reniformibus subpubescentibus, perianthii lobis acuminatis velutinis reflexis.

ASARUM canadense. *Mich. Fl. Bor. Am. v.* 1. *p.* 279. *Willd. Sp. Pl. v.* 2. *p.* 838. *Lam. Ill. t.* 394. *f.* 2. *Pursh Fl. N. Am. v.* 2. *p.* 596. *Bigelow's Am. Med. Bot. v.* 1. *t.* 15. *p.* 149. *Lodd. Bot. Cab. t.* 889. *Sweet Br. Fl. Gard. v.* 1. *t.* 95. *Spreng. Syst. Veget. v.* 2. *p.* 461.

ASARUM Carolinianum. *Walt. Fl. Car. p.* 143.

ASARUM latifolium. *Salisb. Prodr. p.* 344.

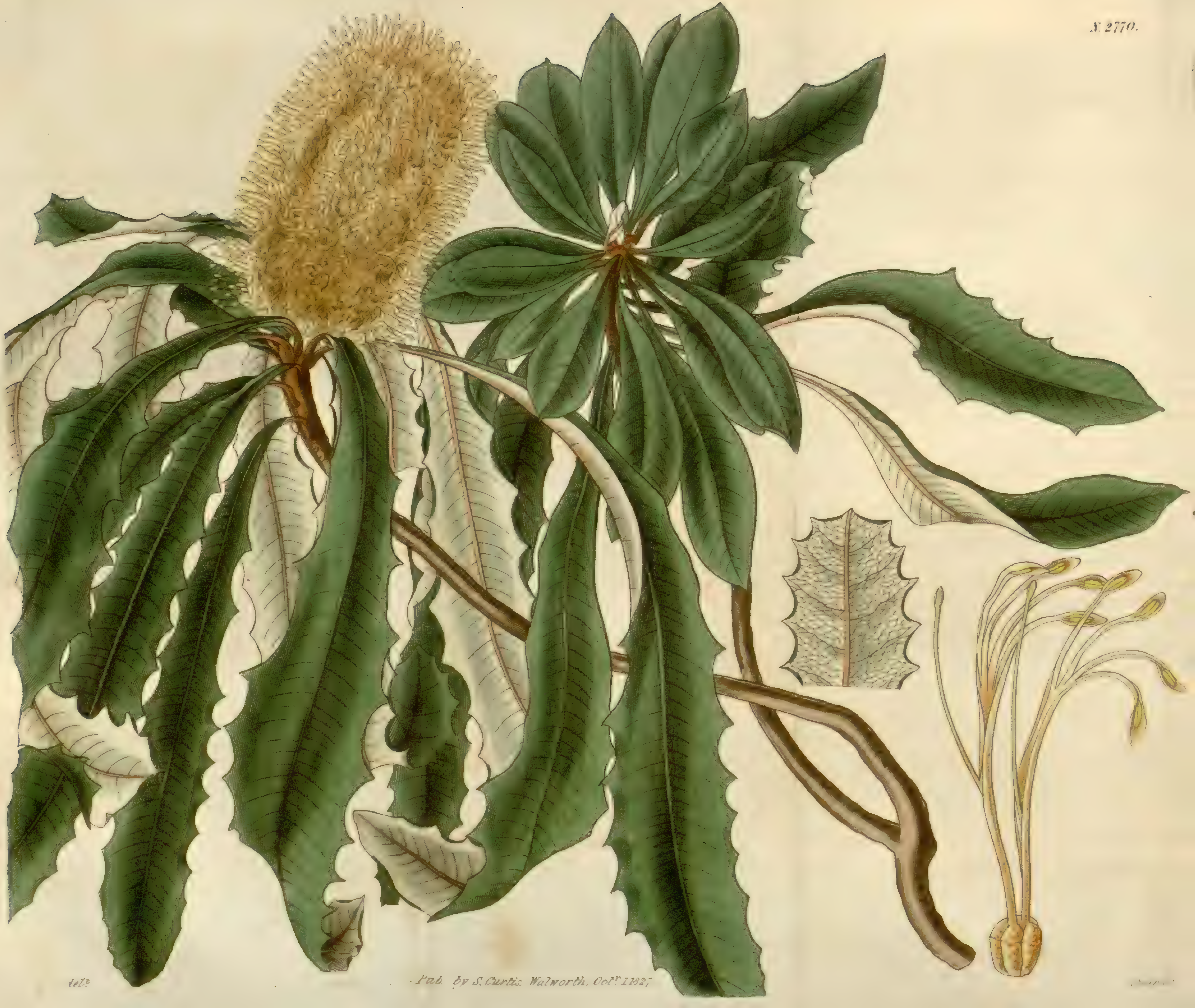
DESCR. *Root* rounded, creeping, between fleshy and woody, throwing out long, descending, whitish fibres. *Stem* very short, decumbent, rounded, glabrous, sheathed with three or four large, brownish, between fleshy and membranous, cymbiform scales. From the top of this stem spring two leaves, cordato-reniform, often more decidedly reniform than those here figured, rather obtuse at the point, the lobes at the base rounded, the sinus very deep, slightly pubescent on the upper surface, beneath more downy, the margin indistinctly ciliated; there are three principal nerves on each side the midrib springing from the base, and all these are united by numerous reticulations, most prominent on the underside: colour a very delicate yellow green. *Petioles* four to five inches long, terete, very densely hairy, the hairs mostly deflexed. *Peduncle* solitary, about one and a half or two inches long, reddish, densely pubescenti-hirsute, terminated by a single, erect, or inclined flower. *Perianth* superior: *Segments* three, united into an urceolate or globose tube below, which is white within, with dark purple lines at the base and at the points of union, the rest forming three ovato-acuminate lobes, more or less reflexed, whose upper surface is deep purplish-brown, and velvety. *Stamens* twelve, erect, placed upon the top of the germen, at the base of the style, purple. *Filaments* subulate, six longer, placed between the rays of the stigma, and six shorter, opposite the lobes: *Anther* lateral, one cell on each side, opening by a longitudinal cleft. *Pollen* yellow. *Germen* globose, tomentoso-hirsute, six-celled, each cell many seeded: *Style* rather short, columnar: *Stigma* umbilicate, with six, spreading, rather obtuse rays.

A hardy perennial, cultivated in England, before 1713, by Bishop Compton, and deserving a place in every collection, from the singular structure of the flowers, which are, moreover, brighter coloured than those of our European species. Some excellent remarks on the medicinal properties will be found in Dr. Bigelow's American Medical Botany. Closely as it is allied to the A. *Europæum* in botanical character, it does not, like that, act as an emetic. The aromatic flavour of the root is more agreeable than that of the Aristolochia *serpentaria*, and it is much employed in its native country as a warm stimulant and diaphoretic. It is used instead of Ginger by the country people, and hence its name of *Wild Ginger*. It is called *Snake-root* too, from the similarity of its properties to the Aristolochia just mentioned, and *Colt's-foot*, probably, from the shape of the leaf.

It grows in woods, and extends from Canada to Carolina. With us, its flowering season often begins in April, in N. America in May, and continues till July.

Fig. 1. Section of a Flower. 2. Stamen. 3. Style and Stigma. 4. Section of Germen.—*Magnified.*

N. 2770.



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Pub. by S. Curtis, Walworth, Octr. 1827

BANKSIA INTEGRIFOLIA. ENTIRE-LEAVED BANKSIA.

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Class and Order.

TETRANDRIA MONOGYNIA.

(Nat. Ord.—PROTEACEÆ.)

Generic Character.

Cal. quadripartitus (raro quadrifidus). *Stamina* apicibus concavis laciniarum immersa. *Squamulæ* hypogynæ 4. *Ovarium* biloculare, loculis monospermis. *Folliculus* bilocularis, ligneus: Dissepimento libero, bifido. *Amentum* flosculorum paribus tribracteatis. *Br.*

Specific Character and Synonyms.

BANKSIA *integrifolia*; foliis verticillatis oblongo-lanceolatis integris mucronulatis: subtus venulis reticulantibus conspicuis, folliculis tomentosis, caule arborea. *Br.*

BANKSIA integrifolia. *Linn. Suppl. p.* 127. *Lam. Encycl. v.* 1. *p.* 369. *Willd. Sp. Pl. v.* 1. *p.* 535. " *Cavan. Annal. De Hist. Nat. v.* 1. *p.* 229. *Ic.* 6. *p.* 30. *t.* 546." *Pers. Syn. Pl. v.* 1. *p.* 116. *Brown in Linn. Trans. v.* 10. *p.* 206. *Prod. p.* 393. *Ait. Hort. Kew. ed.* 2. *v.* 1. *p.* 215. *Spreng. Syst. Veget. v.* 1. *p.* 485. *Graham in Jameson New Journ. of Sc.* 1827, *p.* 174.

BANKSIA spicata. *Gærtn. de Fruct. v.* 1. *p.* 221. *t.* 48.

BANKSIA oleæfolia. *Cav. Annal. de Hist. Nat.* 1. *p.* 228. *Ic. p.* 30. *t.* 545. *et* B. glauca. *Cav. Annal. de Hist. Nat.* 1. *p.* 230. *Ic.* 6. *p.* 31*. *(fide Br.)*

DESCR. " *Trunk* erect. *Bark* dark and cracked. *Branches*, at first, erect, ultimately spreading, covered with soft, yellowish pubescence when young. *Buds* in whorls, but generally all, excepting one or two, abortive. *Leaves* petiolated, subverticillated or scattered, ligulate, dry, stiff, undulated,

green and naked above, below, covered with white tomentum, through which many small reticulated veins appear; when young covered with yellow tomentum on both sides, sinuato-serrated, occasionally entire, serratures mucronate, middle-rib prominent behind. *Flowers* terminal, head two to three inches long, less than half the length of the leaves, which are generally crowded at the base. *Calyx* silky.

We have a plant which has not yet flowered, but which I can consider only a variety, that is more vigorous in its growth; the trunk swollen into joints; the branches more erect; the leaves more decidedly verticilled; more of them entire, and many of them lanceolate, having evident nearly transverse primary veins, the pubescence on the young shoots being red-brown." *Graham.*

Introduced to our gardens, from the neighbourhood of Port Jackson, in 1788, by Mr. THOMAS WATSON: but, according to Hortus Kewensis, it does not appear to have flowered when the second edition of that work was published. Our drawing was made from a fine plant which flowered at the Edinburgh Botanic Garden, in May, 1827. The seeds had been sent to Dr. Graham, in 1819, by Mr. FRASER. Both from Dr. GRAHAM and Mr. BROWN's observations on the species, it seems to be liable to much variation: the latter gentleman indeed observes, "Species polymorpha, cui nimis affines sunt B. *insularis* et *compar*."

Fig. 1. Two Flowers, with their bracteæ. 2. Underside of a portion of the leaf to shew the reticulations.—*Magnified.*

N. 2771.

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MIRBELIA GRANDIFLORA. LARGE-FLOWERED MIRBELIA.

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Class and Order.

DECANDRIA MONOGYNIA.

(Nat. Ord.—LEGUMINOSÆ.)

Generic Character.

Cal. 5-fidus, bilabiatus. *Legumen* dispermum, longitudinaliter biloculare, sutura utraque superiore præsertim introflexa. *D. C.*

Specific Character and Synonym.

MIRBELIA *grandiflora;* pubescens, foliis alternis ovato-lanceolatis, floribus axillaribus binis.
MIRBELIA grandiflora. *Aiton MSS.*

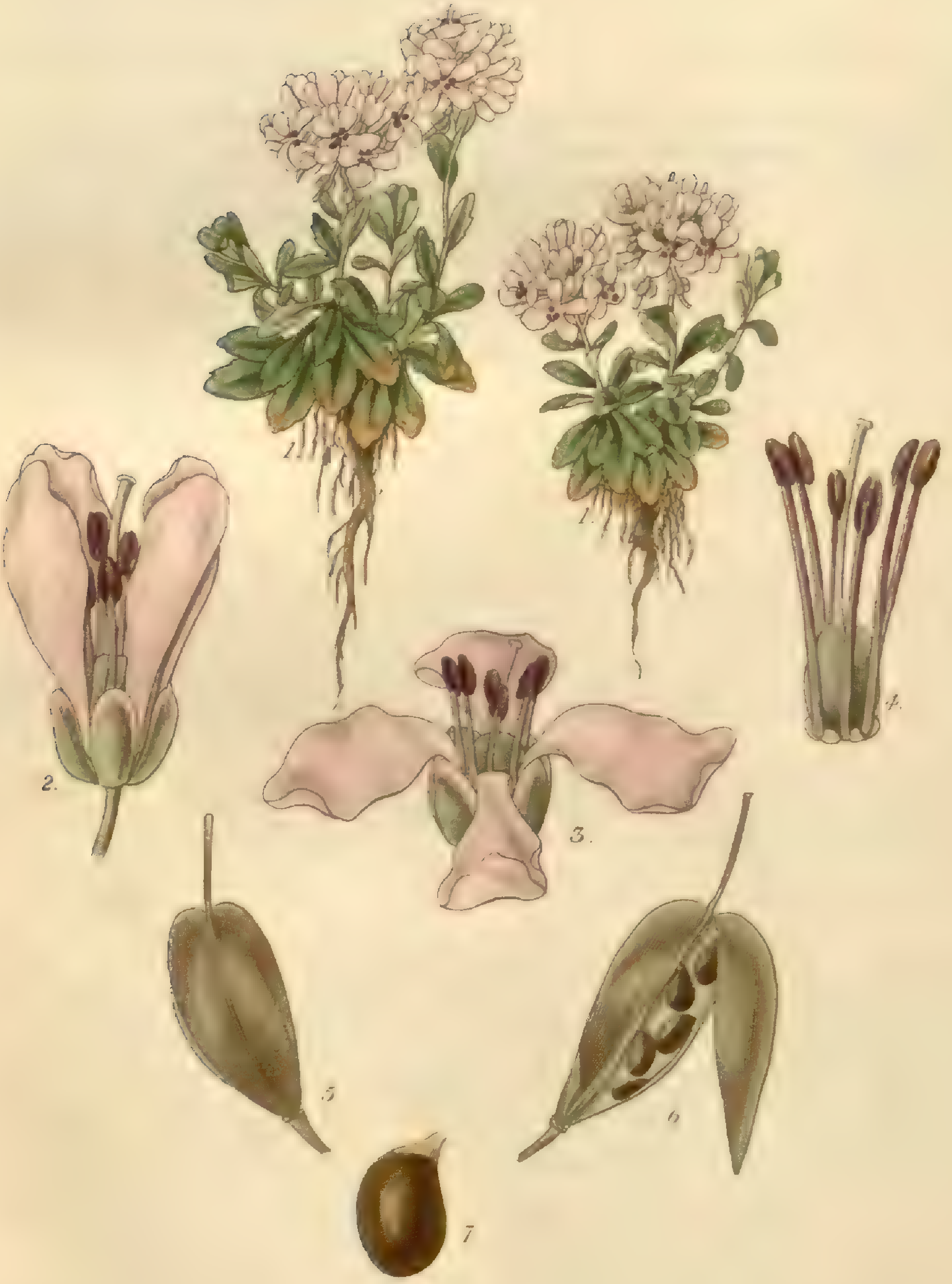
DESCR. Apparently a small shrub, hairy or pubescent in all its parts, except the corolla. *Leaves* an inch long, on very short petioles, ovato-lanceolate, indistinctly reticulated with close nerves, dark-green above, paler beneath. *Flowers* axillary, in pairs, on extremely short pedicels. *Calyx* of two lips; the upper cut into two short teeth, the lower into three longer, lanceolate ones, very hairy on the outside. *Vexillum* broadly obcordate, subunguiculate, bright yellow, striated, having a deep red horse-shoe-shaped mark, waved at the margin. *Alæ* oblongo-falcate, yellow, with a red blotch on one side. *Carina* of two, oblong, concave, unguiculate *petals,* united at the extremity. *Stamens* ten, free, unequal: *Filaments* subulate: *Anthers* oblong. *Pistil: Germen* ovate, hairy. *Style* ascending, short. *Stigma* capitate. *Legume* having the outer coat easily separating from its interior substance, which is two-valved, bearing two black, shining, kidney-shaped *seeds.*

Of this interesting species of Mirbelia, having yellow flowers, I know nothing, except from the beautiful drawing kindly communicated to me, by W. T. Aiton, Esq. from Kew Gardens. The seeds were sent from the Blue Mountains in New South Wales, by Mr. Allan Cunningham, in 1823.

De Candolle considered blue flowers to be characteristic of the genus; but in this, and in another species, we find, that the flowers are yellow, whilst every other characteristic is perfectly that of Mirbelia.

Fig. 1. Flowering specimen. 2. Specimen in fruit (outline only). 3. Calyx. 4. Vexillum. 5. Alæ. 6. Carina. 7. Stamens surrounding the Pistil. 8. Pistil. 9. Upperside of a Capsule. 10. Underside of ditto. 11. The same deprived of its outer integument. 12. Seeds.—All but 1. and 2. *more or less magnified.*

N. 2772.



Pub by S. Curtis, Walworth, Oct.r 1 1827

Swan Sc

HUTCHINSIA STYLOSA. SWEET-SCENTED LONG-STYLED HUTCHINSIA.

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Class and Order.

TETRADYNAMIA SILICULOSA.

(Nat. Ord.—CRUCIFERÆ.)

Generic Character.

Silicula elliptica, valvis navicularibus, apteris; *loculis* dispermis, rarius polyspermis. *Calyx* æqualis. *Petala* æqualia. *D. C.*

Specific Character and Synonyms.

HUTCHINSIA *stylosa*; foliis subcarnosis, inferioribus petiolatis obovato-oblongis subintegris, caulinis oblongis, staminibus petala et stylo siliculam subæquantibus. *D. C.*

HUTCHINSIA stylosa. *D. C. Syst. Veg. v. 2. p. 387. D. C. Prodr. v. 1. p. 177. Spreng. Syst. Veg. v. 2. p. 863.*

IBERIS stylosa. *" Tenore, Prodr. Fl. Neap. XXXVII."*

THLASPI minimum. *Arduin. Specim. 2. p. 37. t. 15. f. 1.? (D. C.)*

DESCR. A small, tufted growing plant, not above two or three inches high, and scarcely more than biennial in its duration. *Root* subfusiform, fibrous. *Stems,* two or three from the same root, and not unfrequently throwing up innovations from near the base. *Leaves* dark green, somewhat fleshy, quite glabrous, the *radical ones* the largest, and (as are those of the young shoots) more or less petiolated, slightly toothed, oblong or obovate, those of the main stems oblong, sessile, scarcely toothed, almost amplexicaul. *Flowers* in crowded corymbs of a most delightful fragrance. *Cal.* of four, elliptical, nearly erect, concave leaflets, green, the margin scariose, purple. *Petals* oblong

long, waved, patent, clawed, purple or rose colour, equal in length. *Stamens*, four longer and two shorter, almost equalling the petals in length: *Filaments* purple. *Anthers* oval, deep purple: *Pollen* bright yellow. *Germen* elliptical, slightly compressed: *Style* longer than the germen, and nearly equal to the petals, green. *Stigma* obtuse, scarcely dilated. *Silicula* oblongo-obcordate, nearly plane above, more convex beneath: *Valves* keeled: *Dissepiment* semi-ovate. Each *cell* has about five *seeds*, which are pendent, and attached to the marginal receptacle, broadly-oval, brown.

An inhabitant of stony and rocky places in the more elevated of the Neapolitan mountains. The seeds from which our plants were raised, were sent, by its discoverer, Professor TENORE of Naples, to the Glasgow Botanic Garden. Flowers have now been produced in the months of March and April, for two successive years, from the same roots, kept under a common frame, in pots. We trust to prove, that it is sufficiently hardy to bear our winters; and that it may be cultivated like our more common hardy alpine plants, to which it will make a most valuable addition: the blossoms being both shewy and fragrant; the fragrance more resembling that of the HELIOTROPE than any thing I can compare it with. Professor DE CANDOLLE says the flowers are white, probably judging from dried specimens. They are with us always of a fine purplish rose-colour.

Fig. 1. Plants natural size. 2. Single flower, with the Petals scarcely expanded. 3. Flower fully expanded. 4. Stamens and Pistil. 5 Silicula. 6. Ditto, with one of the Valves, separating and shewing the situation of the Seeds. 7. Seed.—*All more or less magnified.*

N° 2773.

W. J. H. del.

Pub. by S. Curtis, Walworth, Oct. 1. 1827

Swan Sc.

(2773)

ONCIDIUM PULCHELLUM. ELEGANT ONCIDIUM.

Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ.)

Generic Character.

Labellum explanatum, lobatum, basi bituberculatum. *Petala* patentia (2 antica nunc connata). *Columna* alata. *Massæ pollinis* 2, postice bilobæ; medio affixæ processu communi stigmatis. *Br.*

Specific Character.

ONCIDIUM *pulchellum;* floribus racemosis secundis, petalis ovalibus subunguiculatis, duobus anticis connatis lineari-spathulatis, labello quadrilobo, lobis rotundatis æqualibus, foliis acute carinato-triquetris.

DESCR. Parasitic. *Roots* flexuose, whitish, branched. *Stem* none. *Leaves* equitant, with their compressed, submembranous, striated base, and jointed on that base; the rest carinate and acutely triquetrous, thick and succulent, dark green, destitute of striæ, very sharp at the point, distichous, linear-lanceolate, three to five inches long. *Scape* arising from the base on the outside of the plant, six to seven inches high, slender, here and there bracteated, terminating at the extremity by a secund raceme of ten or twelve delicate flowers. *Corolla* of five, small, whitish petals, of which the three posterior ones are ovate, subunguiculate, the middle one concave, the two anterior ones connate, so as to form, beneath the *labellum,* a linear-spathulate, apparently single, bidentate *petal.* *Lip* large, spreading horizontally, cut into four, nearly equally rounded, white *lobes,* having a tinge of pink near the base, and some yellow spots around and upon the trifid crest. *Column* semiterete, white, with two delicate, rose-coloured, obovate, spreading, slightly reflexed wings. *Anther-case* ovate, acute, white. *Pollen masses* two, ovate, two-lobed at the back, fixed to a linear, white pedicel, which has a small gland at the base.

A native of Demerara, where it was discovered growing upon trees, by C. S. Parker, Esq. and from plants sent by him to the Liverpool Botanic Garden, which flowered in June, 1827, the accompanying figure was taken.

The absence of the bright yellow of the blossoms of many Oncidia, is compensated in this by great delicacy; the ground of the flower being pure white. There are a few orange-coloured spots near the base of the large, four lobed *lip*, and the wings of the column are rose-coloured. In habit it approaches the Ionidium of Exotic Flora (Ionopsis of Kunth.).

Fig. 1. Back view of a Flower. 2. Front view of ditto. 3. Column and base of the Lip. 4. Column, from which one Wing and the Anther-case have been separated. 5. Anther-case. 6. Pollen Mass.—*All more or less magnified.*

2
1
3
4

[illegible]   [illegible]

SCILLA ESCULENTA. β. *fl. albo.* ESCULENT SQUILL OR CAMASS; *white-flowered variety.*

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Class and Order.

HEXANDRIA MONOGYNIA.

(Nat. Ord.—ASPHODELEÆ.)

Generic Character.

Cor. 6-petala, patens, decidua. *Filam.* filiformia, petalorum basi adnexa.

Specific Character and Synonyms.

SCILLA *esculenta;* bulbosa, scapo foliis linearibus carinatis longiore, petalis lineari-oblongis basi contractis, 5 subascendentibus, infimo deflexo.
(α.) flore cæruleo.
SCILLA esculenta. *Gawler in Bot. Mag. t.* 1574.
PHALANGIUM esculentum. *Nutt. in Fraser. Cat.* 1813. *Nutt. Gen. of N. Am. Pl. v.* 1. *p.* 219.
PHALANGIUM Quamash. *Pursh. Fl. N. Am. v.* 1. *p.* 226.
ANTHERICUM esculentum. *Spreng. Syst. Veget. v.* 2. *p.* 84.
(β.) flore albo. *t.* 2774.

DESCR. *Bulb* ovate, covered with a brown husk. *Leaves* eight to ten inches, or almost a foot long, linear, grooved, somewhat carinated, rather acute, attenuated at the base, bluish green. *Scape* perfectly naked, from a foot to a foot and a half, and even, in the wild specimens, two feet high, rounded, terminated by a raceme of from ten to twelve, or even twenty flowers, these are large and shewy. *Pedicels* short, horizontal, subtended by a linear subulate *bractea,* longer than the pedicel. *Corolla* of six petals, an inch long, slightly imbricating before expansion, and then forming a clavate bud, nearly flat on the upper side, but gibbous below, pale blue in α, in β pure white, spreading horizontally, but not equally, for the five upper petals are more inclined upwards, and stand nearer to each other than the lower one, which is deflexed, and, as it were, apart from the rest: each is linear-oblong, somewhat concave, a little keeled on the back, faintly striated, at the base a little waved, and contracted into a sort of *claw* or *unguis*, and there having the sides conduplicate. The petals remain, as well as the stamens, till the fruit advances to maturity. *Filaments* as long as the corolla, slender, white, inserted into the base of the petals. *Anthers* versatile, oblong, yellow. *Germen* obtusely trigonal, roundish, three-celled; *ovules* placed in two rows, in the centre, in the internal angle of each cell. *Style* filiform, as long as the stamens. *Stigma* minutely and unequally trifid. The ripe fruit I have not seen.

I have given a description of this interesting and very desirable plant, because, although the blue-flowered state of it is already published at tab. 1574 of this work, yet, in the shape and size of those blossoms, there is a considerable difference from those here figured. Our blue and white-flowered varieties agree in every thing excepting colour. It will be at once seen by Mr. GAWLER's figure, that the flowers there are not half so large as these; nor is the irregularity of the petals there observed, which is so striking in our plant, and is indicated even in the bud: so that, probably, this irregularity, taken in conjunction with the persistent corolla, will, at some future time, when we shall be better acquainted with the fruit, cause this plant to be separated from SCILLA, no less than from PHALANGIUM and ANTHERICUM, with which it has, by some authors, been placed.

Our roots were brought from the shores of the Columbia, on the North-west coast of America, by Dr. SCOULER, in 1826, and being planted in a border, and covered with a frame, the flowers, both blue and white, were produced in May, 1826. Two blossoms only seemed to be in perfection at a time, and those continued but for one day, when two more expanded, and so on in succession.

The roots are eaten by various Indians on the North-west coast of America: and a kind of cake, which Dr. SCOULER met with among the natives of the Columbia, is supposed to be made of them.

Fig. 1. Petal and Stamen. 2. Back view of a Petal. 3. Pistil. 4. Section of the Germen.—*Magnified.*

K.G del.

Pub. by S. Curtis, Walworth, Octr 1 1827.

CALCEOLARIA PURPUREA. PURPLE-FLOWERED SLIPPERWORT.

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Class and Order.

DIANDRIA MONOGYNIA.

(Nat. Ord.—SCROPHULARINÆ.)

Generic Character.

Cal. 4-partitus. *Cor.* bilabiata, labium inferius inflatum, calceiforme. *Caps.* semi-bivalvis, valvulis bifidis.

Specific Character.

CALCEOLARIA *purpurea;* herbacea, caulibus erectis ramosis, foliis venoso-rugosis hispidis, radicalibus cuneato-spathulatis serratis postice integerrimis subacutis, caulinis cordatis superioribus minoribus integerrimis, corymbis terminalibus multifloris. *Graham.*

CALCEOLARIA purpurea. *Graham MSS.*

DESCR. *Stems* in our plants, many from the same root, erect, pubescent. *Root-leaves* spathulato-cuneate, somewhat acute, with a strong middle rib, veined, wrinkled, with a few long, scattered hairs on the surface. *Stem-leaves* cordate, broad, decussating, more entire than the root-leaves, uppermost pair nearly smooth, and quite entire. *Corymbs* terminal: *bracteæ* two, ovate, at the base of the corymb. *Pedicels* numerous, slightly bent, filiform. *Calyx:* segments ovate, pubescent. *Corolla* rather small, of an uniform reddish-violet colour, upper lip nearly half the size of the lower, which is doubly furrowed. *Graham MSS.*

The seeds were received, both at the Edinburgh and Glasgow Botanic Gardens, in December, 1826, from Mr. CRUICKSHANKS, who collected them in the Cordillera. The habit of the plant is quite that of the CALCEOLARIA *corymbosa,* next which it should be placed, and it seems to require the same treatment. It flowered at the Edinburgh Royal

Botanic Garden, in the beginning of August, 1827. *Graham MSS.*

Mr. Cruickshanks has been so obliging as to send me, besides the seeds of this curious Calceolaria, beautifully dried specimens, gathered below Los Ojos del Aqua, a high pass in the Cordilleras, on the route from St. Jago de Chili, to Mendoza. In these, the hairs are all glandular, and in the upper part of the stem glutinous. The leaves are variable, more or less cordate on the stem; more or less decidedly tapering into a footstalk at the root; and more or less distinctly toothed, sometimes even almost laciniated, at the margin. The flowers are greatly smaller than in C. *corymbosa,* the upper lip quite entire, the lower one not pendent, but standing out horizontally, so as almost to close the mouth.

Fig. 1. Back view of a Flower. 2. Front view of ditto. 3. Stamens. 4. Pistil.—All but fig. 1, *more or less magnified.*

N. 2776.

Pub. by S. Curtis, [illegible] 1827.

W. J. H. del. Swan sc.

GESNERIA VERTICILLATA. VERTICILLATE GESNERIA.

****

Class and Order.

DIDYNAMIA ANGIOSPERMIA.

(Nat. Ord.—GESNERIEÆ.)

Generic Character.

Cal. 5-partitus. *Cor.* tubuloso-campanulata, limbo $\frac{2}{3}$. *Stigma* bilobum. *Capsula* monolocularis, bivalvis, placentis parietalibus bilamellatis. *Spreng.*

Specific Character.

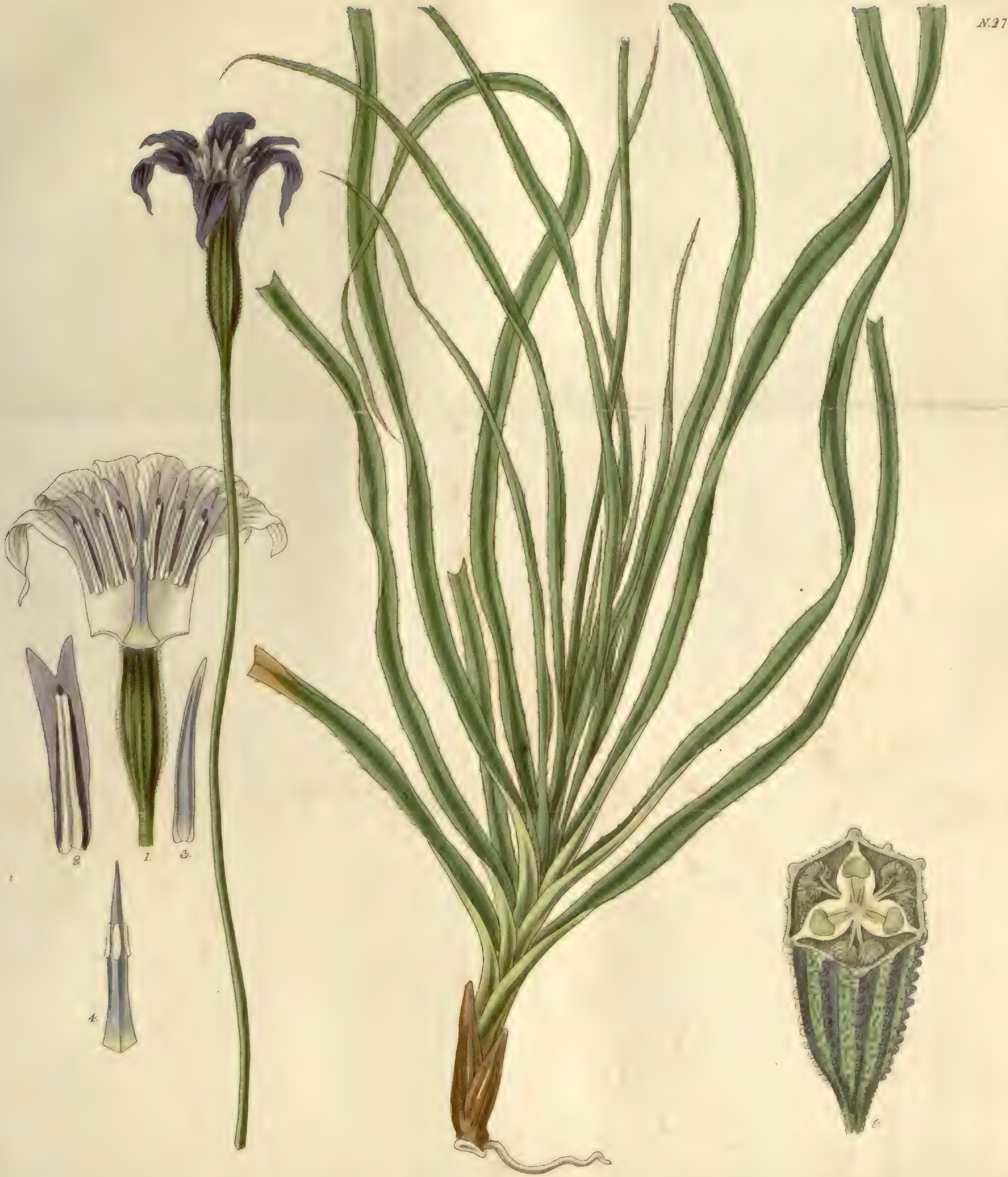
GESNERIA *verticillata;* herbacea foliis verticillatis quaternis ovatis serratis pubescenti-mollibus petiolatis, pedunculis terminalibus unifloris, floribus nutantibus infundibuliformi-cylindraceis, ore quinquefido subæquali, laciniis extus basi 5-tuberculatis.

DESCR. *Stem* about a foot high, subcylindrical, green, pubescent, somewhat tuberous at the base, simple. *Leaves* in two (or more ?) distant whorls, each of four leaves, which are spreading, or reflexed, ovate approaching to cordate, petiolated, dark green, clothed with a soft pubescence, much veined, midrib at the base, and on the under side, as well as the lateral nerves, wholly red, the margin strongly serrated, the extremities of the older leaves very coarsely and doubly so. *Petioles* about one-third of the length of the leaves (those of the upper whorl much less so, thick, red, pubescent, grooved above. *Peduncles* two (or more *?*) from the extremity of the stem, and from the centre of the upper whorl of leaves, three to four inches long, red, single-flowered, below erect, then pendent, slender, pubescent. *Flower* altogether drooping. *Calyx* half superior, of five teeth, erect, lanceolate, green. *Corolla* between two and three inches long, tubular, somewhat funnel-shaped, the base having five vesicular swellings, throughout pubescent; the colour is reddish, inclining to purple, with several longitudinal series of brown streaks towards the extremity. The mouth is cut into five obtuse short lobes, nearly equal, scarcely spreading, the two upper the smaller, standing close together, and, as it were, forming the superior lip; on the outside, at the sinus of each lobe, is a rounded tubercle. *Stamens* four: the *Anthers* united into one body, bearing much white pollen. *Pistil: Germen* half inferior, the upper part gradually tapering into the filiform style, as long as the corolla. *Stigma* obtuse. At the base of the germen, on the upper side, are two large yellow glands.

This very beautiful and graceful GESNERIA is distinguished by many points from the hitherto described species of the genus. It was kindly communicated from the rich collection of Mrs. ARNOLD HARRISON of Aighburgh, having been sent to her, by her brother, WILLIAM HARRISON, Esq. from the hills about Rio de Janeiro. It of course requires the heat of the stove, and is a plant in every way deserving of more extended cultivation.

Fig. 1. Summit of a Flower, shewing the Stamens and top of the Style. 2. Base of the Corolla. 3. Base of the Germen, Calyx, and Glands (two of the Segments of the Calyx being cut away to shew the Glands).—Slightly *magnified*.

N.2777.



W. J. H.

Pub. by S. Curtis. Walworth Nov. 1. 1827.

Swan Sc

BARBACENIA PURPUREA. PURPLE-FLOWERED BARBACENIA.

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Class and Order.

HEXANDRIA MONOGYNIA.

(Nat. Ord.—HÆMODOREÆ. *Br.*)

Generic Character.

Perianthium corollinum, ovario adnatum, infundibuliforme, sexfidum. *Filamenta* bifida, antheras dorso affixas in divisione (non semper) gerentia. *Capsula* trilocularis, polysperma. *Mart.*

Specific Character.

BARBACENIA *purpurea;* foliis lineari-acuminatis carinatis spinuloso-serratis, scapo foliis longiore, ovario elongato lineatim tuberculato, antheris basi filamentorum, affixis.

DESCR. *Caudex* scarcely any, divided in a dichotomous manner, bearing a few striated, brownish scales, and numerous, linear, somewhat spirally inserted, acuminated, flexuose and slightly twisted, carinated, striated, rigid *leaves;* their margins are beset with many, but rather distantly placed, minute, spinous *teeth,* pointing upwards; the bases are sheathing. *Scape* much longer than the leaves, obtusely trigonal, scabrous upwards, single-flowered. *Flower* erect, moderately large, of a beautiful purple colour. *Petals* six, united into a tube at the base, lanceolate, the three outer narrower, reflexed, much acuminated, obscurely striated, the three inner broader, waved, more erect, acute, veined; at the mouth of the tube, are six broadly linear, petaloid, bifid, purple filaments, opposite the petals, at the base of which, by the lower part of its back, is fixed the linear, erect *Anther,* two celled, enclosing a white pollen, shorter than the filaments. *Pistil: Germen* inferior, oblong or subclavate, greenish, with six lines of purplish tubercles, and scabrous, with minute elevated dots between them. A transverse section of this *germen,* shews three cells, with large cordate perforated dissepiments, and between, in each cell, two vertical plates, covered at their margins, the whole way down, with numerous oblong *ovules*. *Style* reaching as high as the *anthers*, acuminated, trigonal, purple, having below the point three oblong, white *glands*, which represent the stigmata.

Barbacenia was so named by Vandelli, in honour of Barbacena, a governor of Minas Geraes, in Brazil. The species, however, of that author seems to be very imperfectly known. Drs. Spix and Martius discovered twelve species during their travels in Brazil, inhabiting mountains of micaceous schist and other primitive rocks, in dry barren places, at an elevation of from one thousand to five thousand five hundred feet above the level of the sea, and between the fourteenth and twenty-third parallels of south latitude. Although a smaller race of plants, they seem in aspect to be very nearly allied to the Vellosiæ, which inhabit similar places in Brazil, and which by their curiously branched and spreading trunks with terminal tufts of leaves (not much unlike some of the Aloes, especially the A. *dichotoma,*) and liliaceous flowers, give a peculiar aspect to their native districts. Of the twelve species of Barbacenia known to M. M. Spix and Martius, six only are yet described by them in the Nova Genera et Species Plantarum Brasiliensium. With none of those species does the present one accord, and which, I believe, is the first that has ever been known in a state of cultivation. The seeds were gathered from a bundle of Brazilian moss by the Honorable and Reverend William Herbert of Spofforth; and some young plants being sent to Lord Milton's collection at Wentworth House, they were there brought to flower under Mr. Cooper's judicious management, when a beautiful specimen was communicated to me in the month of August, 1827.

The caudex or stem, Mr. Cooper observes, is very short, and, probably, only arises from the old leaves falling away from the lower part of the plant. At present the young plant bears few flowers; but an old plant, with its numerous blossoms, which, it would no doubt produce, of a deep and lively purple colour, must have a very beautiful effect; and, it will be acknowledged to be a most valuable and interesting addition to our stoves.

It is to be increased by dividing the plant, and it likewise promises to ripen its seeds.

Fig. 1. Flower cut open. 2. Stamen. 3. Back view of the Anther. 4. Style and Stigma. 5. Section of the Germen.—*All more or less magnified.*

N. 2778

Pub by S. Curtis Walworth Nov. 1 1827

W. J. H. delt.

(2778)

HELIANTHUS PUBESCENS. ILLINOIS SUN-FLOWER.

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Class and Order.

SYNGENESIA POLYGAMIA FRUSTRANEA.

(Nat. Ord.—COMPOSITÆ.)

Generic Character.

Involucrum imbricatum, squamis subsquarrosis. *Rec.* paleaceum. *Pappus* diphyllus. *Spreng.*

Specific Character and Synonyms.

HELIANTHUS *pubescens ;* foliis oppositis sessilibus semiamplexicaulibus ovato-lanceolatis crenato-serratis hirsutiusculis supra asperis subtus pubescenti-scabris, caule piloso scabro, squamis involucri lineari-lanceolatis pubescentibus ciliatis.

HELIANTHUS pubescens. *Vahl Symb. v.* 2. *p.* 92? *Willd. Sp. Pl. v.* 3. *p.* 3240? *Ait. Hort. Kew. ed.* 2. *v.* 5. *p.* 127. *Pursh Fl. N. Am. v.* 2. *p.* 570. *Elliott Sketch of Bot. of S. Carol. and Georg. v.* 2. *p.* 418? *Bot. Reg. t.* 524. *Spreng. Syst. Veget. v.* 3. *p.* 617.

HELIANTHUS mollis. *Lam. Encycl. v.* 3. *p.* 81. *Willd. Sp. Pl. v.* 3. *p.* 2240. *Pursh Fl. N. Am. v.* 2. *p.* 572. *Elliott Sketch of Bot. of S. Carol. and Georg. v.* 2. *p.* 418.

HELIANTHUS canescens. *Mich. Fl. Bor. Am. v.* 2. *p.* 140.

HELIANTHUS tomentosus. *Mich. Fl. Bor. Am. v.* 2. *p.* 141.

DESCR. A perennial herbaceous plant, the *stem* rising to the height of eight feet, scabrous, with shortish rigid hairs below, above more tomentose and less rough, divided at the summit into a panicle of flowers. *Leaves* opposite, except the uppermost ones, where they seem rather to take the place of bracteæ, ovato-lanceolate, sessile, semiamplexicaul at the base, and mostly connate, the largest as long as the human hand, the upper ones gradually smaller, rather indistinctly crenato-serrate at the margin, every where clothed with short hairs, which, on the upper side, are more scattered, rigid, tuberculated at the base, and occasioning that side to be very scabrous to the touch; the under side is far less rough, and the hairs are closer set and softer, and give a tomentose or rather pubescent character; two of the lateral nerves, especially in the lower leaves, are longer than the rest, but they do not spring from the base, and the term "*folia triplinervia*" can hardly with propriety be applied to them. The whole texture of the leaves is thickish and rigid; the colour a full green, paler beneath. *Flowers* terminal in panicles, large, handsome. *Peduncles* three to six inches long, with alternate, lanceolate, nearly entire leaves, or bracteæ. *Involucre* of many imbricated, subulate, or linear-lanceolate, very dark coloured, almost black *scales;* two or three of the outer lax and spreading, slightly downy, the margins more so, and ciliated. *Florets* of the *Ray* sixteen to eighteen, ligulate, striated, bi-tridentate at the extremity: their *germen* abortive, destitute of pappus. *Florets* of the centre very numerous, tubular, deep yellow, brown on the outside. *Pappus* of two, chaffy, subulate scales. *Receptacle* with linear, chaffy scales, as long as the florets, and carinated, pubescent at the back, near the top.

According to the author of the Botanical Register, this plant is the true HEL. *pubescens* of Hort. Kew. and of PURSH; and it may be that of WILLDENOW; but the characters in none agree satisfactorily with our plant. It is perhaps very variable; and hence, have arisen the appearances which have given origin to the supposed species H. *mollis, canescens,* and *tomentosus,* which Mr. GAWLER has, perhaps, justly enough referred to our plant.

It appears to be common in the Southern states of N. America, in S. Carolina and Georgia, in the Illinois country, Kentucky, and Tenessee; and, indeed, in dry seasons, in the swamps throughout Pensylvania and Virginia.

It deserves a place, from its large showy flowers, in every garden, being perfectly hardy. Seeds were sent by Mr. NUTTALL from N. America to Mr. BARCLAY at Bury Hill, in whose garden they produced flowers, in the autumn of 1825. From those plants our drawing and description were made.

Fig. 1. Floret of the Ray. 2. Floret of the Disc. 3. Scale of the Receptacle.—*Magnified.*

No 2779

[illegible]

Pub. by S. Curtis, Walworth Nov. 1.1827.

TRIFOLIUM ALPESTRE. NARROW-LEAVED ROUND-HEADED CLOVER.

****

Class and Order.

DIADELPHIA DECANDRIA.

(Nat. Ord.—LEGUMINOSÆ.)

Generic Character.

Flores capitato-spicati. *Cor.* 1-petala, persistens. *Legumen* 1-spermum, circumscissum, calyce tectum, *s.* 2—3 spermum. *Spreng.*

Specific Character and Synonyms.

TRIFOLIUM *alpestre;* capitulis densis subglobosis sessilibus, calyce hirsuto dente infimo tubum corollæ æquante, stipulis nervosis setaceo-acuminatis, foliolis lanceolatis ciliato-serrulatis venoso-striatis, caule stricto subsimplici.

TRIFOLIUM alpestre. *Linn. Sp. Pl. p.* 1082. *Jacq. Obs. P. III. p.* 14. *t.* 64. *Fl. Austr. v.* 5. *p.* 15. *t.* 433. *All. Ped. v.* 1. *p.* 304. *Willd. Sp. Pl. v.* 3. *p.* 1368. *Afz. in Linn. Trans. v.* 1. *p.* 234. *Ait. Hort. Kew. ed.* 2. *v.* 4. *p.* 384. *De Cand. Syst. Veget. v.* 2. *p.* 194. *Spreng. Syst. Veget. v.* 3. *p.* 215.

DESCR. *Root* long and creeping. *Stem* from six to eight inches to a foot in height, erect, quite straight, rounded, green, scarcely pubescent, simple, or a little branched at the base. *Leaves* ternate: *leaflets* lanceolate, somewhat hairy, beautifully striated, with close parallel dichotomous veins, the margins minutely serrated, and ciliated. *Petiole* short. *Stipules* large, amplexicaul, sheathing, united at the base, somewhat inflated, scariose, with purplish veins, terminating in long awl-shaped points, pubescent. *Head* roundish, or broadly oval, sometimes geminate, terminal

and sessile, of many densely-placed, purple *flowers*. *Calyx* greenish, white and scariose, hairy, five-toothed, two short teeth on each side, and the lowermost as long as the tube of the corolla, all setaceous and purple. *Petals* conjoined. *Vexillum* cylindrical for a great part of its length, spreading upwards, and but little longer than the *alæ* and *carina*.

A most elaborate history of this species of Clover or Trefoil is given by Professor AFZELIUS, in the first volume of the Transactions of the Linnæan Society of London. It is a native of subalpine countries, in various, especially the southern parts of the continent of Europe, and was cultivated, according to the Hortus Kewensis, in the Gardens of Britain before 1789. It is perfectly hardy, and is a very desirable plant; its heads of flowers being of a peculiarly rich and bright purple. With us, in the Glasgow Botanic Garden, it flowers in the month of June.

Fig. 1. Flower.—*Magnified.*

Pub by S. Curtis, lworth. Novr 1 1822.

OMALANTHUS POPULIFOLIA. POPLAR-LEAVED OMALANTHUS.

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Class and Order.

MONŒCIA MONADELPHIA.

(Nat. Ord.—EUPHORBIACEÆ.)

Generic Character.

Flores racemosi, inferiores fæminei.

MASC. Perianthium bilobum. *Stamina* 3—6, basi monadelpha.

FÆM. Pendens. *Perianthium* in mare. *Stylus* bipartitus. *Capsula* ovalis, bivalvis, bilocularis, loculis monospermis. *Semen* pendens arillo pulposo tectum.

Specific Name and Synonyms.

OMALANTHUS populifolia. *Graham in Jameson's New Ed. Journ. of Science,* 1827, *p.* 175.

OMALANTHUS leschenaultianus? *Juss. (Adr.) Tent. de Euph. t.* 16. *f.* 53. *(sine ult. descr.)*

DESCR. A *shrub* (or probably in its native climate, a *tree*) having attained the height of ten or twelve feet in the stove of the Edinburgh Botanic Garden, much branched; the older branches covered with a glabrous greyish bark: the younger ones reddish, glabrous, as is every part of the plant. *Leaves* alternate, on long, red, filiform, slender stalks, which have a gland at their extremity on the upper side; at first enclosed within two lanceolate, greenish stipules, which soon fall away, rhombeo-ovate, somewhat acuminate, quite entire at the margin, and there often bordered with red, especially at the base; in age, and just before their fall, they turn of a fine orange red, the under side much paler, nerves parallel, transversely oblique, often reddish; on the underside reticulated with smaller ones. *Racemes* terminal, from two to four inches long. *Female* flowers (four or five) occupying the lower part, solitary, pendant, having a broad green bractea at the base, with a gland on each side. *Pedicel* curved downwards, so that the flower is drooping. *Perianth* cup-shaped, two-lobed, or shortly two-lipped, pale green, embracing the lower half of the pistil. *Germen* oblong, green, tapering into a bipartite *style*, whose divisions are linear, and recurved: the *stigma* appears to constitute a gland or disk on the underside, just beneath the extremity. *Male flowers* numerous, very small, generally in threes, of which the central one is on the largest pedicel, and has the most stamens (six), while the lateral ones have only three or four stamens, all included in a bractea resembling that of the female flower. *Perianth* small, green, membranous, cup-shaped, rather compressed, two-lobed. *Filaments* united at the base in one row. *Anthers* large, didymous, granulated, at first yellow, at length each lobe bursts with a vertical fissure and becomes green. As the germens advance to maturity, the axis of the raceme which supported the male flowers falls off, and the fruit reaches to the size of a large pea, oval, terminated by the bifid style. Before it is quite mature, the pericarp is green and fleshy, marked with a suture on each side, where it evidently opens. There are two cells, each bearing one brown, pendent seed, enveloped in a white, pulpy, semipellucid arillus. *Albumen* copious, white. *Embryo* small, compressed, imbedded in the upper part of the albumen, the *radicle* pointing to the scar of the seed.

This plant has much affinity with STILLYNGIA *sebifera*. A comparison of the flowers, however, soon enabled me to refer it to the genus OMALANTHUS of the excellent Memoir of the younger JUSSIEU, on the EUPHORBIACEÆ. His specimens were in an imperfect and a dried state, which will account for the trifling difference in his figure and mine.

Native of New Holland, whence seeds were communicated by Mr. FRASER to Dr. GRAHAM, in 1824. The plants flowered in the stove of the Botanic Garden of Edinburgh, in June, 1827.

My wild specimens were sent to me from Java, by M. SPANOGHE.

Fig. 1. Male Flowers and their Bractea. 2. Male Flower spread open to show the Stamens. 3. Young Anther. 4. Old ditto. 5. Female flower and Bractea. 5. Style and Stigma. 6. Section of Capsule. 7. Section of a Seed enclosed in its pulpy Arillus or Coat.—*More or less magnified.*

N. 2781

Dr Greville del. Pub. by S. Curtis [illegible]

OXALIS BIPUNCTATA. TWO-SPOTTED WOOD-SORREL. = Martiana

* * *

Class and Order.

DECANDRIA PENTAGYNIA.

(Nat. Ord.—OXALIDEÆ.)

Generic Character.

Cal. pentaphyllus. *Pet.* 5. *Stamina* alterna longiora. *Capsula* 5-gona, 5-locularis, 5-valvis, seminibus arillatis ad angulos loculorum fixis. *Spreng.*

Specific Character.

OXALIS *bipunctata;* scapo multifloro petiolis vix longiori compresso petiolisque pubescentibus, foliis ternatis, foliolis rotundato-obcordatis subtus pubescentibus supra subnudis, petiolis cylindraceis, sepalis obtusiusculis apice bimaculatis, staminibus 5 stylos superantibus. *Graham Mss.*

DESCR. *Leaves* bright green above, paler (occasionally purple, when young) below, very slightly acid, all radical, ternate, leaflets broadly obcordate, pubescent on the lower side, very sparingly so on the upper, ciliated, middle rib prominent below, and giving off two strong arching veins on each side, those nearest the base being generally branched on their outer side; *petioles* round, five inches long, pubescent, hairs spreading and lax. *Scapes* numerous, pubescent like the petioles, and rather longer than they, slightly compressed, somewhat irregularly divided at the top; but generally into three branches, which are sometimes again divided, though generally the flowers proceed directly from the extremities, on long, round, spreading pedicels. *Pedicels* of the bud nodding, of the fruit reflected. *Bractea* at the primary division of the scape, a short entire sheath, at the secondary, divided into small leaflets, placed one on the outside of each pedicel. *Calyx* green, with a few adpressed hairs, leaflets lanceolato-elliptic, with narrow membranous edges, each having two oblong, approximating, orange callosities on the outside of the apex. *Petals* lilac, and veined, sub-linear, truncate, unequally crenate at the apex, spreading. *Stamens* ten, five shorter and five as much longer than the styles: *filaments* colourless, united at the base, and above the union hairy. *Anthers* yellow, cordate, attached by their backs to the filaments. *Germen* nearly smooth, green, divided into five, oblong lobes, each containing several seeds. *Stigmata* lobular, deep green, projecting between the longer filaments.

The plant flowered abundantly in the stove of the Royal Botanic Garden, Edinburgh, in April, 1827, but has not produced seeds. It was raised from seeds received from Mr. HARRIS at Rio de Janeiro, by Captain GRAHAM, of his Majesty's Packet Service; but other specimens which are extremely similar were in the collection before, though it is not known from whence obtained. These differ from the plant described, only in having the back of the leaf more reticulated, the anthers paler, and the shorter stamens equal in length to the styles. GRAHAM *MSS.*

This may, perhaps, prove to be only a luxuriant state of OXALIS *violacea,* the figure of which plant in Jacq. Hort. Vindib. v. 2. t. 180, seems to be, as it were, intermediate between the small glabrous plant, given at t. 2215 of the Botanical Magazine, and the present individual. If this idea be correct, then, O. *violacea* is a native of South, as well as of North America. The OXALIS *elegans* and *latifolia* of HUMBOLDT and KUNTH, are both nearly allied to our plant.

Fig. 1. Calyx with its Stamens and Pistil. 2. Stamens and Pistil.—*Magnified.*

N.º 2782

CERASTIUM BIEBERSTEINII. TAURIAN MOUSE-EARED CHICKWEED.

****

Class and Order.

DECANDRIA PENTAGYNIA.

(Nat. Ord.—CARYOPHYLLEÆ.)

Generic Character.

Cal. 5-phyllus. *Pet.* 2-fida. *Caps.* 1-locularis apice decemdentata.

Specific Character and Synonyms.

CERASTIUM *Biebersteinii;* caulibus basi repentibus adscendenti-diffusis foliisque oblongo-lanceolatis tomentoso-lanatis, pedunculis erectis dichotomis, foliolis calycinis oblongis tomentosis, capsula ovata subcylindracea calyce longiore. *D. C.*

CERASTIUM Biebersteinii. *De Cand. in Mem. Soc. Hist. Nat. de Gen. v.* 1. *p.* 463; *ejusd. Prodr. v.* 1. *p.* 418. *De Cand. Pl. rares de Gen. t.* 11.

CERASTIUM repens. *Bieberst. Fl. Taurico-Caucas. v.* 1. *p.*

CERASTIUM tomentosum α Linn. *Sp. Pl. p.* 629?

DESCR. The lower part of the stem is slender and creeping, and near the base it throws out numerous ascendent branches, which, as well as the whole leaves, are covered with a soft and dense-white tomentum. *Leaves* opposite, connate at the base, patent, linear-lanceolate, subacute. *Panicles* of *flowers* terminal, twice or thrice dichotomous, erect, with a single flower between the dichotomies: there are small opposite oblongo-ovate *bracteæ* at the base of the divisions of the panicle. *Calyx* of five, ovato-oblong leaflets, downy in the middle; the margin glabrous. *Petals* large, white, spreading, obcordate, veined at the base, where it is lengthened into a sort of claw, bifid at the extremity. *Stamens* ten; five alternately shorter. *Pistil: Germen* subglobose: *Styles* five, filiform; *Stigmas* subclavate, glandular, and yellow. The *Capsule,* according to Bieberstein, nearly cylindrical, erect, longer than the calyx, opening with equal straight teeth.

An inhabitant of dry, stony places in the higher Taurian Alps, and sent to our garden by M. Fischer of Gottingen. It flowers early in July, and is a far more desirable plant for cultivation than C. *tomentosum;* being distinguished from it by its broader foliage, and its much larger flowers, which are of a pure white colour.

Fig. 1. Leaflet of the Calyx. 2. Petals. 3. Three Stamens. 4. Pistil.—*Magnified.*

W.J.H. del.

Pub. by S. Curtis Walworth [illegible]

IBERIS TENOREANA. SERRATE FLESHY-LEAVED CANDY-TUFT.

****

Class and Order.

TETRADYNAMIA SILICULOSA.

(Nat. Ord.—CRUCIFERÆ.)

Generic Character.

Silicula emarginata: valvis navicularibus alatis; loculis monospermis. *Petala* inæqualia. *Br.*

Specific Character and Synonyms.

IBERIS *Tenoreana;* basi suffrutescens puberula, foliis subcarnosis crenatis, inferioribus obovatis basi attenuatis, superioribus oblongo-linearibus, siliculis subcorymbosis emarginatis. *D. C.*

IBERIS Tenoreana. *De Cand. Syst. Veget. v.* 2. *p.* 404. *De Cand. Prodr. v.* 1. *p.* 179. *Spreng. Syst. Veget. v.* 3. *p.* 864. *(I. Tenorii.) Sweet. Br. Fl. Gard. v.* 1. *t.* 88.

" IBERIS cepeæfolia. *Tenor. Prodr. Fl. Nap. p. XXXVII. (non Linn.)*"

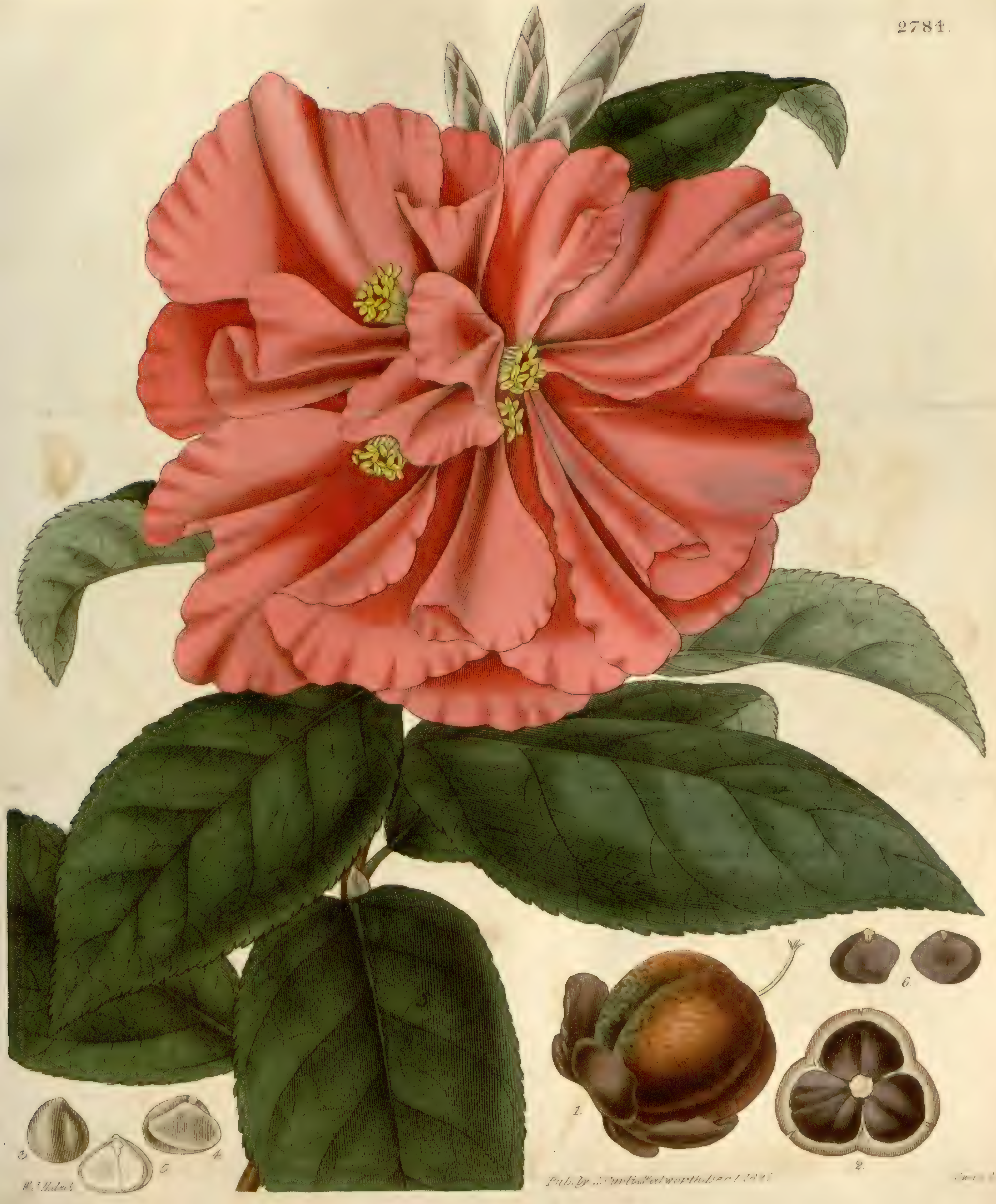
" IBERIS pilosa. *Desv. Journ. Bot.* 3. *p.* 167 *?*"

DESCR. *Stems* short, purplish brown, suffruticose, scarcely pubescent, sending out several ascendant, simple or again divided, opposite, angular, slightly downy, leafy branches, from three to six inches long. Lower *Leaves* and those of the barren shoots obovato-spathulate, the former most frequently entire; those of the fertile shoots becoming gradually smaller, more oblong, and even linear upwards; all of them of a thickish and fleshy substance, dark green, tinged with purplish, finely ciliated at the margins, especially the smaller ones, and at the tapering base or petioles of the larger ones. *Flowers* in dense umbellate *corymbs*, large and shewy, outer ones the most so; at first frequently rose-coloured, afterwards (and sometimes always) pure white; yielding a disagreeable odour. *Pedicels* downy. *Calyx* of four, erecto-patent, oblong, pubescent leaflets, of which that placed between the two smaller petals is always the smallest. *Petals* patent, waved, the two outermost very large. *Stamens* much longer than the calyx: *Filaments* swollen upwards, the four longer ones reddish: *Anthers* small, yellow. *Pistil: Germen* ovate, compressed, style rather longer than the stamens: *Stigma* capitate, notched.

This is an equally desirable plant for the garden, and especially for rock-work, with the I. *nana*. In the Glasgow Botanic Garden, to which the seeds were sent, by Professor TENORE, we find it does best, treated as a semi-hardy plant; being kept under a frame in winter, when it produces its long-lived blossoms of a pale rose colour, or of the purest white in April and May. It is much handsomer than IBERIS *ciliata*, figured in this work (tab. 1030), with which it has some affinity; but the flowers are considerably larger, as are the leaves; these latter too are larger and most decidedly toothed or crenated.

Discovered by Professor TENORE (from whom I have also received native specimens), in the Neapolitan dominions. M. THOMAS detected it near St. Angelo, in the same country, and M. SCHONER upon Mount Vellino, near Abruzzo.

Fig. 1. Leaves slightly magnified. 2. Back view of a Flower. 3. Calyx, Stamens, and Pistil.—*Magnified.*



W. J. Hooker del.

Pub. by S. Curtis Walworth Dec 1 1827

Swan sc.

CAMELLIA RETICULATA. CAPTAIN RAWES'S CAMELLIA.

****

Class and Order.

MONADELPHIA POLYANDRIA.

(Nat. Ord.—CAMELLIEÆ. *D. C.*)

Generic Character, vide tab. 2740.

Specific Character and Synonyms.

CAMELLIA *reticulata ;* foliis oblongis acuminatis reticulatis planis, calyce pentaphyllo colorato, ovario sericeo. *Lindl.*

CAMELLIA reticulata. *Lindley in Bot. Reg. t.* 1078.

The drawing of this splendid species of CAMELLIA, was made by Miss CURTIS in the spring of 1827, from the plant imported by Captain RAWES, in the collection of THOMAS CAREY PALMER, Esq. at Bromley, Kent. Not having myself had the opportunity of seeing the plant, I adopt Mr. LINDLEY's suggestion, of its being a new species, "distinguished from C. *japonica* by its rigid, flat, strongly reticulated leaves, and also by its silky ovarium. The flowers have also a different aspect; the petals are much undulated, and irregularly and loosely arranged, with none of the compactness and regularity for which the C. *japonica* is so much admired."

With the view to render our history of the CAMELLIAS as complete as possible, we have accompanied the figure of this splendid species with the fruit and seeds. We must, however, premise, that the representations 1 and 2 (drawn by Miss C. CURTIS), are from the Waratah Camellia, (*t.* 1654.) and the seeds are from the single red (*t.* 42.). The fruit is thick, coriaceous, roundish, three-lobed, three-celled, and three-valved, the dissepiments arising from the middle of the valves. In the centre is a *columella* or *receptacle*, near the top of which the seeds are fixed, and are thus pendent. Each *cell* contains from one to three seeds, of a roundish form; but more or less angular, according to the pressure of the neighbouring seeds. In the Waratah the seeds are almost black; in the single red, almost of a chesnut brown. *Integument* thick, and almost nucumentaceous: filled in the interior with the embryo, which takes exactly the same shape. *Radicle* superior, directed to the scar of the seed. *Cotyledons* thick, unequal, *plumule* small.

Fig. 1. Fully-formed fruit of the *Waratah Camellia*. 2. Section of the Pericarp, shewing the Seeds. 3, 4. Seeds of the single *Red Camellia*. 5. Section of a Seed of ditto, shewing the unequal Cotyledons, the Radicle, and Plumule. 6. The two Cotyledons separated: the one on the left hand side containing the Radicle and Plumule; the other is simply one of the Cotyledons, with an excavation, in which the one-half of the Radicle and Plumule were immersed:—*All of the natural size.*

2785.

Walworth Dec 1 1827

NICOTIANA NOCTIFLORA. NIGHT-FLOWERING TOBACCO.

****

Class and Order.

PENTANDRIA MONOGYNIA.

(Nat. Ord.—SOLANEÆ.)

Generic Character.

Cal. tubulosus, 5-fidus. *Cor.* infundibuliformis vel hypocrateriformis limbo plicato. *Capsula* apice 4-dentata, placentis ad dissepimentum transversis. *Spreng.*

Specific Character.

NICOTIANA *noctiflora ;* glanduloso-viscosa, foliis lanceolatis undulatis inferioribus oblongis, floribus paniculatis hypocrateriformibus, limbi laciniis obtusissimis diametro tubo subbrevioribus.

DESCR. Apparently an annual, two feet or more in height, with an erect, rounded, branching, leafy stem, clothed, as is all the external part of the plant, with exceedingly viscid, very numerous, short, glandular hairs, giving out a very powerful and disagreeable smell, particularly when touched. *Leaves,* the lower ones oblong and tapering into a footstalk, the rest narrow, lanceolate, sessile, remarkably waved at the margin, all of them acute. *Panicle* of several moderately-sized *flowers,* which expand in the evening and during the night, when they are very sweet scented ; and they are, when in perfection, drooping. *Calyx* tubular, cut into five, linear-lanceolate, rather short, and nearly erect teeth, green, having a white line alternating with the teeth. *Tube* of the Corolla, thrice the length of the calyx, a little enlarged upwards, greenish, with five small depressions just above the calyx, where the stamens are inserted. *Limb* broad, greenish-purple on the outside, pure white and glabrous above, broadly obcordate, very obtuse, emarginate, spreading. *Stamens* unequal in height, reaching nearly to the mouth of the tube. *Filaments* slender, curved and hairy at the base. *Anthers* oblong, yellow. *Pistil: Germen* ovate, inserted into a bright orange-coloured gland, and tapering upwards into a filiform *style,* a little longer than the tube, and terminated by a clavate *stigma.*

The flowers of this species of *Tobacco,* have so much similarity with those of NICOTIANA *undulata* of VENTENAT, SIMS, and BROWN, that I can hardly persuade myself, but that the two plants must be the same. N. *undulata,* however, is said to have the leaves confined to the lower part of the plant, or nearly so, and they of a different shape ; no notice is taken of the numerous viscid glands which cover the entire plant in our individuals ; to which I may add, that, whereas N. *undulata* is a native of New Holland, the present species is found perfectly wild at Uspallata, on the eastern side of the Andes, looking towards Mendoza, whence both dried specimens and seeds were sent to us by Mr. CRUICKSHANKS and Dr. GILLIES, in 1826.

Planted in the open border, in the Glasgow Botanic Garden, the species succeeds remarkably well, blossoming abundantly in the month of August. During the day they make but little show, but as evening approaches, the limb of the flower which was before curiously folded expands into a broad and pure white surface, yielding, at the same time, a powerful fragrance.

If the plant be handled, the smell is very narcotic and unpleasant.

Fig. 1. Stamen. 2. Section of a Calyx, shewing the Pistil and its glandular base. 3. Lower Cauline Leaf. 4. Leaf from near the root.—Fig. 1. and 2. *Magnified.*

W. J. H. del.

Pub. by S. Curtis. Walworth, Dec. 1. 1827.

SISYRINCHIUM CHILENSE. CHILIAN SISYRINCHIUM.

****

Class and Order.

MONADELPHIA TRIANDRIA.

Generic Character.

Spatha diphylla. *Cal.* o. *Petala* 6, subæqualia plana. *Filamenta* omnino connata. *Stylus* 1. *Caps.* trilocularis, infera.

Specific Character.

SISYRINCHIUM *chilense;* caule ramoso ancipiti-alato, foliis ensiformibus, petalis oblongo-subspathulatis retusis mucronatis, capsula pyriformi pubescente, pedunculis pedicellisque gracillimis.

DESCR. *Stems* remarkably compressed, ancipitate, and winged, jointed, branched. *Leaves* linear-ensiform, striated, upper ones gradually becoming shorter and more spathiform. *Peduncles* sometimes solitary and axillary, at other times terminal, and growing four to six together, at all times remarkably slender, filiform, four to five inches long, bearing at their extremity two linear-acuminate *spathes*, which include, generally, three pedicellated, moderately-sized *flowers*. *Pedicels* about one and half inch long, very slender, curved. *Petals* six, oblongo-subspathulate, retuse, with a subulate mucro, pubescent without, and pale purple within, glabrous, and of a deeper purple, marked with five lines; the base is yellow: *Filaments* united into a yellow-green, pubescent tube, bearing, at the top, three large oval yellow *anthers*. *Germen* suboval, pubescent: *Style* about as long as the stamens, and concealed within them, a little thickened below the *stigma*, which is obscurely trifid. *Capsule* pyriform, retuse, nearly glabrous, three-celled, opening at the middle of the cells into three valves. *Seeds* attached to the central portion of the dissepiment (at the axis) in two rows, globose.

The present plant has much affinity with S. *Anceps* and S. *Bermudianum*, having flowers most resembling the former, and germen and ramification most like the latter, differing from both in the singularly slender general as well as partial flower-stalks. These peduncles too are often clustered together, and they give the whole plant quite a different appearance from the Bermudian and Virginian species.

Seeds were obligingly communicated by Mr. Cruickshanks in 1826, from the vicinity of Valparaiso to the Glasgow Botanic Garden, where they flowered in June 1827, and continued blossoming during the whole of that and of the following month.

Fig. 1. Upper side of a Petal. 2. Under side of ditto. 3. Pistil, having the Style surrounded by the Stamens. 4. Pistil separated from the Stamens. 5. Capsule :—*All magnified.*

2787.

W.J.H.del.t

Pub. by S. Curtis, Walworth Dec.r 1. 1827.

MALVA OBTUSILOBA. BLUNT-LEAVED CHILIAN MALLOW.

****

Class and Order.

MONADELPHIA POLYANDRIA.

Generic Character.

Cal. duplex: exterior tryphyllus. *Capsulæ* plurimæ, 1—2 polyspermæ, in orbem dispositæ.

Specific Character.

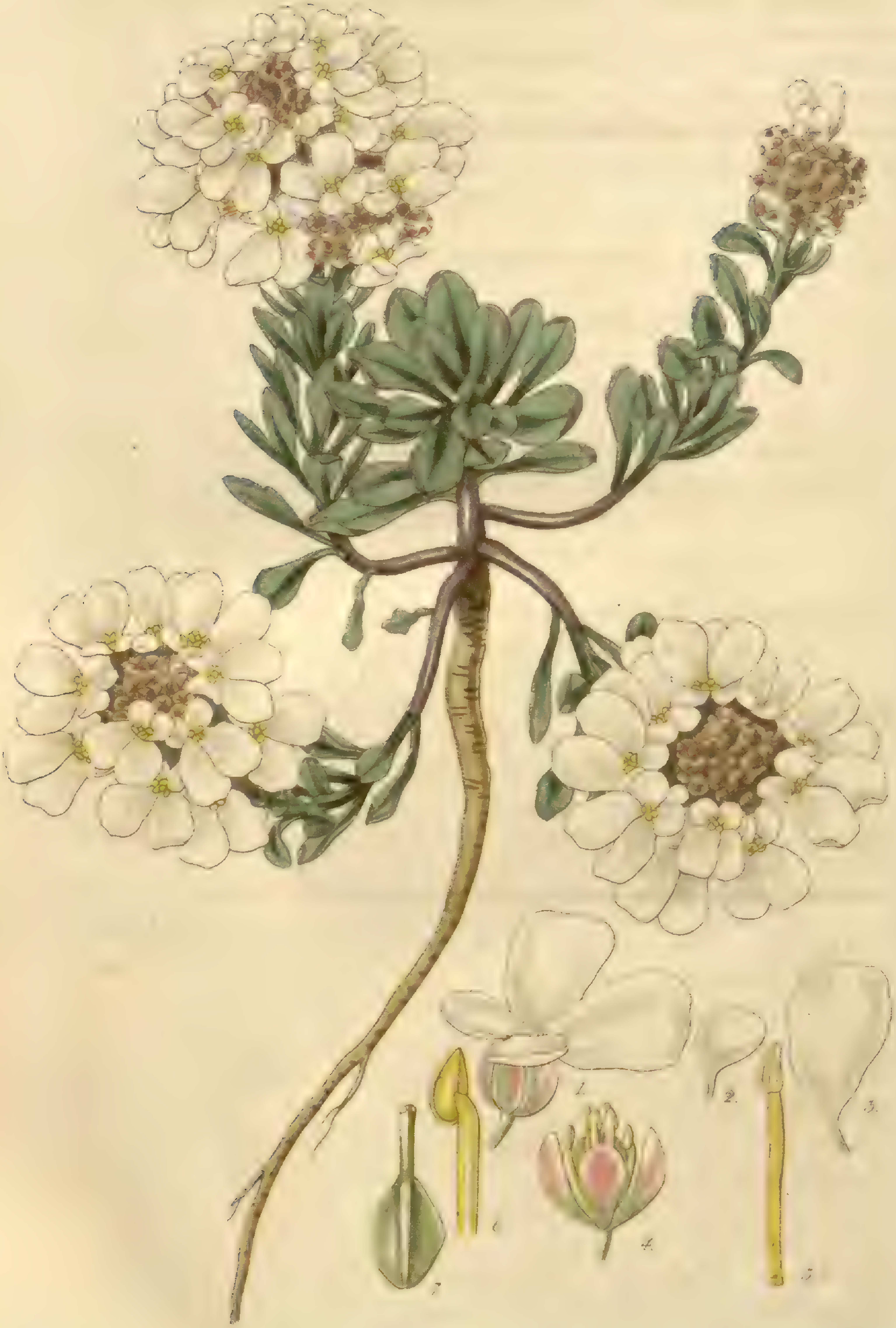
MALVA *obtusiloba;* stellato-tomentosa, foliis cordatis quinquelobis crenatis lobis obtusissimis, pedunculis axillaribus subramosis paucifloris, floribus congestis, calycis exterioris foliolis linearibus.

DESCR. *Stem* three to four feet high, much branched, fruticose, clothed with a densely-placed, whitish, stellated pubescence, as, indeed, is the whole plant. *Leaves* on slender petioles, about equal to them in length, cordate, almost truncated at the base, rather obsoletely five-lobed, the lobes crenate, very obtuse; upon the leaves, the stellated tomentum is so compact, that it is not visible to the naked eye. *Stipules* small, linear, deciduous. *Peduncles* solitary from the axils of the leaves, and longer than the leaves, once or twice branched towards the extremity, where, on each branch, five or six flowers are collected into a head. *Exterior Calyx* of three linear leaflets, much shorter than the *inner,* which is quinquefid, with the segments ovate, very acute, spreading. *Corolla* rose-purple, with a deep spot at the base of each obcordate petal, and with the claw ciliated. *Column* of *stamens* deep purple. *Stamens* collected into a round head. *Anthers* deep purple: *Pollen* yellow: the *styles* are reddish, and produced just beyond the stamens.

Malva *obtusiloba* will rank near to M. *abutiloides*, agreeing in the colour and structure of the flowers, and in the dense stellated pubescence with which the whole plant is covered; but differing essentially in the very obtuse lobes of the leaves. It is an inhabitant of Chili, whence seeds were sent to us from the vicinity of Valparaiso, by our valued correspondent Mr. **Cruickshanks.** They have flourished in the greenhouse, flowering in the month of July.

Fig. 1. Petal. 2. Stamens:—*Magnified.*

2788.



W. J. H. del.

Pub. by S. Curtis Walworth Dec 1. 1827.

IBERIS NANA. SPATHULATE FLESHY-LEAVED CANDY-TUFT.

****

Class and Order.

TETRADYNAMIA SILICULOSA.

(Nat. Ord.—CRUCIFERÆ.)

Generic Character.

Silicula emarginata: valvis navicularibus alatis; loculis monospermis. *Petala* inæqualia. *Br.*

Specific Character and Synonyms.

IBERIS *nana;* herbacea glabra, foliis subrotundo-spathulatis integris subcarnosis, siliculis corymbosis emarginatis, sinu latiusculo obtuso. *D. C.*

IBERIS nana. *" All. Auct. p. 15. b. 2. f. 1." Willd. Sp. Pl. v. 3. p. 456. De Cand. Fl. Fr. ed. 3. v. 4. p. 717. Syst. Veget. v. 2. p. 403. Prodr. v. 1. p. 179. Spreng. Syst. Veget. v. 2. p. 864.*

IBERIS aurosica. *Vill. Delph. v. 1. p. 349. v. 3. p. 289.*

DESCR. Biennial, at least, in a state of cultivation, having a short, purple, naked *stem,* and a few horizontal, simple, or again divided, straggling *branches,* purple at the base, and cylindrical, green and angular at the extremity. *Leaves* broadly oval, or roundish on the barren branches, narrower on the fertile ones, tapering into a footstalk, so as on the whole to be spathulate, dark green, thick, and fleshy, with a central nerve, the margin entire, or slightly serrated, every where perfectly glabrous, the uppermost ones almost linear. *Flowers* large, in terminal *corymbs,* scentless. *Pedicels;* the longest scarcely half an inch long. Calyx of four unequal, erecto-patent, concave, elliptico-spathulate, obtuse leaflets: the inner one the smallest, and with a small tuft of hairs in the middle. *Petals,* two, small, and two four times their size, broadly obovate, pure white (in their cultivated specimens), tapering at the base into a narrow claw. *Stamens;* two short and four long, yellow. *Filament* bent down as it were at the very point, and there inserted into the back near the base of the ovate anther. *Pistil* shorter than the stamens. *Germen* rhomboid, flat, a little keeled on each side in the middle. *Style* as long as the germen, thickish, cylindrical. *Stigma* capitate.

A native of the Alps of Piedmont and Dauphinée, and certainly, as it appears to me, very near allied to the Pyrenean I. *spathulata.* Both are described as having the leaves entire. My native specimens of I. *spathulata* have the leaves serrated, and those of I. *nana* are entire: but in a cultivated state they are both serrated and entire.

Raised from seeds sent from Dr. FISCHER of Gottingen, by Mr. MURRAY at the Glasgow Botanic Garden. In all probability the plant is perfectly hardy, and will prove a great ornament to rock work with its showy long-continuing flowers: but, hitherto, we have kept it under a common frame, where it has flowered in April and May.

The flowers are constantly white in our cultivated specimens, but the wild ones are rose coloured.

Fig. 1. Single Flower. 2. One of the smaller, and 3, One of the larger Petals, natural size. 4. Calyx, Stamens, and Pistil. 5. Single Stamen. 6. Side view of part of a Filament and Anther. 7. Pistil.—*More or less magnified.*

2789.

Pub. by S. Curtis, Walworth, Dec 1 1827.

W. J. H. delt

Swan Sc.

MAXILLARIA RACEMOSA. RACEME-FLOWERED MAXILLARIA.

****

Class and Order.

GYNANDRIA MONANDRIA.

(Nat. Ord.—ORCHIDEÆ.)

Generic Character.

Perianthium patens, resupinatum. *Labellum* cum processu unguiformi columnæ articulatum, trilobum. *Sepala* lateralia exteriora basibus cum processu columnæ connata. *Pollinia* 4, basibus connata, glandulosa. Herbæ *parasiticæ, bulbosæ, Americæ meridionalis.* Folia *corracea plicata.* Racemi *radicales.* LINDL.

Specific Character.

MAXILLARIA *racemosa;* bulbo compresso tetragono, folio lanceolato trinervi, floribus racemosis, petalis ovalibus duobus inferioribus in cornu decurrentibus, interioribus minoribus, labello unguiculato obovato-spathulato subtrilobo cristato, lobis lateralibus incurvis, columna pubescente.

DESCR. *Bulb* about two inches long, nearly oval, compressed, sharp at the edges, and with a longitudinal elevated line or angle on each side the base, with lacerated sheaths or scales: this bulb is terminated by a single, reflexed, lanceolate, stiff, coriaceous, three-nerved *leaf,* acute at the point. From the very base of the plant arises a solitary, bracteated, slender, rounded *scape,* having at the extremity a raceme of nine or ten flowers: these, when open, are erect, with the petals likewise erect, of an uniform, yellowish-brown colour, acute, the two inner ones, which spring from the back of the column, the smallest, the two lowermost and outer ones running down into a spur-shaped process. *Column* white, pubescent, attenuated downwards within the spur, and bearing at its lower extremity, the obovato-spathulate *labellum,* which is not patent, but applied to the column; its colour is yellow with red spots; it is subcrenated, and obscurely three-lobed, of which the lateral lobes are involute, and there is an oblong tubercle in the centre. *Anther-case* hemispherical. *Pollen-masses* two, cleft at the back, yellow, waxy, fixed upon a white gland.

From the rich collection of South American Orchideæ of Richard Harrison, Esq. at Aegburgh, who received it from Rio de Janeiro. It flowered in June, 1827. It may probably rank with the Dendrobium *squalens* of the Botanical Register, which Mr. Lindley now makes a Xylobium; but I scarcely see how that genus is distinguished from Maxillaria, according to Mr. Lindley's character, except in the *straight,* not *resupinate* perianth, and they might, perhaps, both be united without offering much violence to nature.

Fig. 1. Single Flower. 2. Column, with the two inner Leaflets of the Perianth. 3. Side view of the Column. 4. Front view of ditto. 5. Inner view of the Anther-case. 6. Front view of the Pollen Mass. 7. Back view of ditto:—*Magnified.*

2790.

[illegible]

TRIFOLIUM OLYMPICUM. LONG-FLOWERED CLOVER.

****

Class and Order.

DIADELPHIA DECANDRIA.

(Nat. Ord.—LEGUMINOSÆ.)

Generic Character.

Flores capitato-spicati. *Cor.* 1-petala, persistens. *Legumen* 1-spermum, circumscissum, calyce tectum, *s.* 2—3. spermum. *Spreng.*

Specific Character and Synonyms.

TRIFOLIUM *olympicum;* spicis oblongis solitariis, calycibus hirsutis dente infimo longiore tubum corollæ æquante, carina longe attenuata, stipulis subulatis longe vaginantibus, caule erecto stricto foliisque lanceolato-ellipticis hirsutis.

TRIFOLIUM olympicum. *Hornemann MSS.*

DESCR. Stem erect, straight, rounded, simple, pubescent. *Leaves* ternate, oblongo-lanceolate, clothed with rather dense, soft hairs, and distinctly striated with veins: the margin entire. *Petiole* short. *Stipules* large, green, striated, pubescenti-hirsute, embracing the stem and united at the very base, terminating in long subulate points. *Head* subspicate, large, oblong, of many pale-yellowish but rather large *flowers*. *Calyx* whitish, scariose, hairy, with green veins, and five setaceous green teeth, of which four are nearly equal in length, the two upper ones united at their base, the lower one the longest, at length spreading. *Corolla* an inch in length, having the vexillum tubular at the base, broader upwards and spreading, and ending in a gradually acuminated, long, somewhat recurved point.

Alæ and *carina* much shorter than the vexillum. The fruit I have never seen.

Mr. Curtis has given an excellent figure of the Trifolium *canescens* of Willdenow, and observed, that it was distinguished from Tr. *pannonicum*, by the shorter, broader, and more obtuse vexillum. It is probable, that he had then in view, the present plant which has much the habit of Tr. *pannonicum*. The real Pannonicum of Jacq. Obs. t. 42, is probably, as De Candolle suspects, the same as Willdenow's and Curtis's *canescens*, and from both, our plant is well distinguished by the remarkable attenuation of the vexillum of the corolla; so that, in this respect, I know of no species that comes near it. Seeds of our plant were received from Professor Hornemann of Copenhagen two years ago, under the name here adopted; but it appears to be a *MSS*. name, and I presume a native of Mount Olympus. It flowers in the Glasgow Botanic Garden, in July. Perhaps this species may be intended by Persoon, when he says, (Syn. Pl. v. 2. p. 350.) "sub nomine, T. *pannonicum*, in hortis occurrit planta speciosa, magna, flor. flavis distincta, quæ cum icone Cl. Sturmii non convenit, an species distincta?" (T. *alopecuroides*.)

Fig. 1. Back view, and f. 2. Front view of a Flower.—*Magnified*.

INDEX,

In which the Latin Names of the Plants contained in the *First* Volume of the NEW SERIES (or *Fifty-Fourth* of the Work) are alphabetically arranged.

Pl.
2747 Acacia mucronata.
2754 —— penninervis.
2769 Asarum canadense.
2707 Aster acuminatus.
2718 —— fruticosus.
2770 Banksia integrifolia.
2777 Barbacenia purpurea.
2723 Begonia undulata.
2719 Bletia Woodfordii.
2713 Buddlea Brasiliensis.
2741 Cactus cochinellifer.
2742 Ibid.
2775 Calceolaria purpurea.
2763 Calypso borealis.
2745 Camellia japonica fl. simpl. albo.
2784 —— reticulata.
2733 Campanula Prismatocarpus.
2711 Candollea cuneiformis.
2727 Caryocar nuciferum.
2728 Ibid.
2749 Caryophyllus aromaticus.
2750 Ibid.
2782 Cerastium Biebersteinii.
2758 Ceratiola ericoides.
2724 Conospermum taxifolium.
2714 Crotalaria dichotoma.
2743 Cunninghamia lanceolata.
2717 Deeringia celosioides.
2744 Dianthus Caryophyllus, *var.*
2721 Dichorisandra oxypetala.
2760 Dorstenia ceratosanthes.
2767 Euonymus echinata.
2725 Gesneria aggregata.
2776 —— verticillata.
2716 Gilliesia graminea.
2710 Gnaphalium modestum.
2761 Gnidia tomentosa.
2755 Gongora speciosa.
2726 Habenaria leptoceras.
2778 Helianthus pubescens.
2731 Houttuynia cordata.
2772 Hutchinsia stylosa.
2788 Iberis nana.

Pl.
2783 Iberis Tenoreana.
2722 Justicia speciosa.
2766 —— ventricosa.
2709 Liparis foliosa.
2715 Lockhartia elegans.
2734 Lodoicea Sechellarum.
2735 Ibid.
2736 Ibid.
2737 Ibid.
2738 Ibid.
2787 Malva obtusiloba.
2729 Maxillaria Parkeri.
2789 —— racemosa.
2771 Mirbelia grandiflora.
2705 Mutisia speciosa.
2756 Myristica officinalis.
2757 Ibid.
2730 Neottia grandiflora.
2785 Nicotiana noctiflora.
2764 Octomeria graminifolia.
2780 Omalanthus populifolia.
2773 Oncidium pulchellum.
2781 Oxalis bipunctata.
2746 Pleurothallis foliosa.
2720 Protea longiflora.
2706 Pyrethrum uliginosum.
2740 Rhipsalis grandiflorus.
2732 Scævola Kœnigii.
2712 Schelhammera undulata.
2774 Scilla esculenta, β. fl. albo.
2759 Sida mollis.
2753 —— pulchella.
2786 Sisyrinchium chilense.
2708 Solanum coriaceum.
2739 —— Quitense.
2751 Telfairia pedata.
2752 Ibid.
2779 Trifolium alpestre.
2790 —— olympicum.
2765 Trixis auriculata.
2762 Tulipa stellata.
2768 Witheringia montana.
2748 Zygopetalon Mackaii.

INDEX,

In which the English Names of the Plants contained in the *First* Volume of the New Series (or *Fifty-Fourth* of the Work) are alphabetically arranged

Pl.
2754 Acacia, Feather-nerved.
2747 ——— Mucronated.
2769 Asarabaca, Canadian, or wild Ginger.
2718 Aster, Small-shrubby Cape.
2770 Banksia, Entire-leaved.
2777 Barbacenia, Purple-flowered.
2723 Begonia, Wave-leaved.
2719 Bletia, Woodfordian.
2713 Buddlea, Brazilian.
2763 Calypso, Northern.
2784 Camellia, Captain Rawes's.
2745 ——— Single white-flowered
2733 Campanula, Angular-fruited, Cape.
2711 Candollea, Cuneate.
2783 Candy-tuft, Serrate, fleshy-leaved.
2788 ——— Spathulate, fleshy-leaved.
2758 Ceratiola, Heath-like.
2782 Chickweed, Taurian Mouse-eared.
2790 Clover, Long-flowered.
2779 ——— Narrow-leaved, round-headed.
2749 Clove Spice.
2750 Ibid.
2741 Cochineal Fig, Spineless.
2742 Ibid.
2734 Cocoa-nut, Double, or Seychelles-Island.
2735 Ibid.
2736 Ibid.
2737 Ibid.
2738 Ibid.
2724 Conospermum, Yew-leaved.
2714 Crotalaria, Dichotomous.
2743 Cunninghamia, Lance-leaved.
2717 Deeringia, Celosia-like.
2721 Dichorisandra, Sharp-petaled.
2760 Dorstenia, Cleft.
2725 Gesneria, Cluster-flowered.
2776 ——— Verticillate.
2716 Gilliesia, Grassy-leaved.
2710 Gnaphalium, Squamose-flowered, Cape.
2761 Gnidia, Downy.
2755 Gongora, Large yellow-flowered
2726 Habenaria, Slender-spurred.
2731 Houttuynia, Cordate.

Pl.
2772 Hutchinsia, Sweet-scented, Long-styled.
2766 Justicia, Hop-flowered.
2722 ——— Purple-flowered, East Indian.
2709 Liparis, Many-leaved.
2715 Lockhartia, Beautiful.
2787 Mallow, Blunt-leaved, Chilian.
2729 Maxillaria, Mr. Parker's.
2789 ——— Raceme-flowered.
2707 Michaelmas Daisy, Pointed-leaved.
2771 Mirbelia, Large-flowered.
2705 Mutisia, Handsome, pinnate-leaved.
2730 Neottia, Large-flowered.
2756 Nutmeg Tree, Aromatic.
2757 Ibid.
2764 Octomeria, Grass-leaved.
2780 Omalanthus, Poplar-leaved.
2773 Oncidium, Elegant.
2706 Ox-eye, Large-flowered, Marsh.
2744 Picotees, *Two varieties.*
2746 Pleurothallis, Leafy, fragrant.
2720 Protea, Long-flowered, cream-coloured.
2740 Rhipsalis, Large-flowered.
2732 Scævola, Shrubby, East Indian.
2712 Schelhammera, Wave-leaved.
2753 Sida, Delicate, white-flowered.
2759 ——— Soft-leaved.
2786 Sisyrinchium, Chilian.
2775 Slipper-wort, Purple-flowered.
2739 Solanum, Angular-leaved, downy.
2708 ——— Coriaceous.
2727 Souari, or Butter-nut.
2728 Ibid.
2767 Spindle-wood, Spinous-fruited.
2774 Squill, Esculent, or Camass; white-flowered *var.*
2778 Sunflower, Illinois.
2751 Telfairia, Pedate.
2752 Ibid.
2785 Tobacco, Night-flowering.
2765 Trixis, Auriculated.
2762 Tulip, Stellated, East Indian.
2768 Witheringia, Mountain, or St. Lorenzo Potatoe.
2781 Wood-Sorrel, two-spotted.
2748 Zygopetalon, Mr. Mackay's.